Passenger research for price control reset

Final Report

Blue Marble Research

December 2021

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1. Summary of findings

Introduction

NERL commissioned Blue Marble to conduct research into passenger priorities, to feed into its NR23 plan. Specifically, the research aims to:

- Identify the issues that matter most to passengers, and how these vary between different groups of passengers.
- Explore passengers' informed perspectives on key decisions relating to the NR23 plan.

Research Methodology

Blue Marble conducted a three-stage study among passengers:

1) *Qualitative research (3 x 90-minute focus groups, with 4-5 passengers per group)*

   We explored unprompted passenger priorities and expectations. We also used these insights to inform the design of the subsequent survey.

2) *Quantitative survey (online 15-minute survey of 2,004 passengers)*

   We used a representative survey to robustly measure passenger priorities and attitudes.

3) *Deliberative qualitative research (5 x 90-minute focus groups, with 4-5 passengers per group)*

   We focussed on passengers' informed views on key issues. We provided passengers with key information regarding NERL and Air Traffic Control, exploring findings from the quantitative survey in more detail.

Passengers' air travel priorities

When passengers are asked about their priorities for air travel, overall travel experience is initially front-of-mind – this includes comfort, ease and smooth progress. Passengers tend not to mention safety spontaneously, but it is implicitly important. On reflection, most passengers class staying safe as their number one priority.

Punctuality is an important, albeit secondary, priority. There is an acceptance that short delays are inevitable, but passengers are particularly keen to avoid long, disruptive delays which greatly affect their journeys and subsequent plans.

Unprompted views of air traffic control

Few passengers think about Air Traffic Control when flying or claim to know much about it. But while they do not have detailed knowledge, their core understanding is broadly accurate in terms of the role that Air Traffic Control plays.

The vast majority of passengers have a positive impression of Air Traffic Control. Trust in Air Traffic Control is also very high.

Priorities for Air Traffic Control

Passengers rank safety as (by a distance) the number one priority for Air Traffic Control. Punctuality and (to a slightly lesser extent) environmental impact are considered the next most important priorities.

After giving passengers more detail about specific potential future outcomes that NATS could influence, maintaining safety remains their dominant priority for Air Traffic Control.

Environmental issues rise up the ranking in this context and emerge as important secondary priorities (above punctuality).

Investment priorities

We explored the relative importance of NATS investing in resilience, punctuality, the environment and keeping costs low. We provided consumer-friendly explanations of each area and of what investment could achieve, while taking safety "off the table" at this point. In this context, resilience was explained as the ability of the Air Traffic Control system to withstand disruption, such as an IT system failing or Air Traffic Controllers being affected by a virus. Punctuality and progress were explained as ensuring flights take off and land on time, minimising in-air travel time and minimising the use of holding patterns (the full explanations are included in the appendix).

- Resilience and the environment were considered the top two priorities, narrowly ahead of punctuality.
- Keeping costs low was considered far less of a priority overall, although a significant minority of passengers ranked it as their most important priority.

We also explored specific priorities within each of these investment areas:

- Within the area of resilience, the greatest weight is given to reducing the chance of occasional one-off events causing cancellations and major disruption.
- Within the area of the environment, passengers say that it is most important to invest in more efficient flight paths to reduce flight CO2 emissions.
- For punctuality, there was less of a hierarchy, with the most direct routing to minimise in-air travel time slightly ahead of other potential priorities.

Passengers also expect the aviation industry to be continually investing in and exploring new technology. They assume that this will enable the industry to make air travel more efficient and environmentally friendly.

Likewise, investing in updating current technology is also considered essential by passengers – particularly from a safety and security perspective. They also consider adapting existing technology to be beneficial from an environmental perspective.

Departure vs. arrival punctuality

When we asked passengers (without providing further information) whether it is more important to arrive on time or depart on time, there was no clear consensus.

When we provided passengers with information on the relative pros and cons of each option, passengers rarely had very strong views, with other issues considered more important. On balance, however, there was a slight preference for focusing on arrival time to facilitate onward travel.

ADS-B

After an explanation of ADS-B, passengers were overwhelmingly positive about it, with the perceived safety benefits the main reason for this. There is clear preference to pay for these safety benefits rather than save the money paid. The environmental benefits shown in the information were well received, but were a secondary priority.

2. Introduction

NERL commissioned a survey to provide insight into passenger priorities to feed into its NR23 plan, and has been encouraged to do so by the CAA. To ensure that NERL addresses **consumer** priorities during the NR23 period (the price control for NERL for the period 2023-27), Blue Marble Research were commissioned to conduct a programme of research. Specifically, the aims of the research are:

- To identify the issues that matter most to passengers, and how these vary between different groups of passengers.
- To explore passengers' informed perspectives on key trade-offs, for example between cost and resilience.

Research objectives

The programme of research was designed to explore, robustly measure, and understand passenger views on:

- Overall priorities when flying
- Awareness, knowledge and perception of Air Traffic Control (ATC)
- What passengers believe is important for NATS, as the organisation responsible for UK Air Traffic Control, to focus on
- Passenger priorities, based on trade-off exercises, for key areas NATS could invest in, versus keeping costs to a minimum
- Specific issues including paying for ADS-B and reduction in delays.

Methodology

The research consisted of three stages:

Phase one: initial qualitative research

In the initial phase we conducted online focus groups to provide insight into unprompted passenger priorities and expectations. This information was used to inform the design of the subsequent quantitative research survey.

Phase one detail

- 3 x 90-minute focus groups
- Fieldwork 7th and 8th September 2021
- Sample of 4-5 participants per focus group – all to have flown at least once since 2019

Phase two: quantitative survey

The quantitative research stage comprised a large-scale survey of UK adults for robust measurement of key passenger priorities and attitudes identified at the initial qualitative stage.

Phase two detail

- Online survey of 15 minutes duration
- Fieldwork 5th October to 11th October 2021
- Sample of 2,004 UK adults 18+ years old who have flown since the beginning of 2019 OR have not flown during this period but are likely to fly in future
- Sample quotas on age, gender and region applied
- Quota targets set on profile of UK flyers in CAA UK Aviation Consumer Tracker Wave 9 (2020)

Phase three: deliberative qualitative research

The final stage focused on understanding passengers' informed views on key issues. We employed a deliberative approach, providing passengers with key information regarding NERL and Air Traffic Control, and exploring in more detail consumer thinking behind specific findings revealed in the quantitative survey.

Phase three detail

- 5 x 90-minute focus groups
- Fieldwork 2nd, 3rd and 4th November 2021
- Sample of 4-5 participants per focus group – all to have flown at least once since 2019

3. Passenger views of air travel

Priorities for air travel

Unprompted, safety and passenger experience are top priorities when flying

The immediate passenger experience is front-of-mind when passengers think about their own priorities for air travel: issues such as comfort, ease and smooth progress are foremost for many passengers, across both business and leisure travel. For business travellers, issues such as strong Wi-Fi and smooth connections are also very important – enabling them to continue working efficiently while away from home for work.

Safety is implicitly important to passengers – although rarely mentioned in initial discussions, passengers' number one priority is staying safe – and they largely expect air travel to deliver this. There is a widespread belief that air travel is very safe, and that safety is the primary role of Air Traffic Control.

When prompted, punctuality emerges as being important – passengers implicitly want all aspects of the flying experience to be on time and not subject to long delays (including check-in, security, baggage reclaim as well as the flight itself). There is a strong emphasis on movement and progress – passengers want to feel like they are making progress through the system.

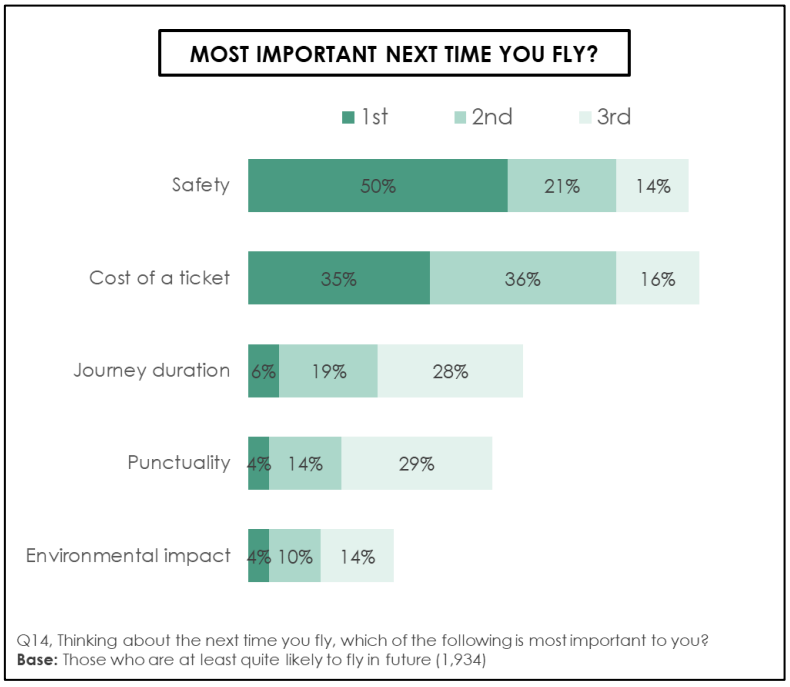
Passengers also expect the aviation industry to be doing as much as it can to reduce its environmental impact (including investing in more efficient planes and fuel options and planning more efficient routes). However, passengers understand that flying is inherently bad for the environment – and accept that choosing to fly is a personal decision.

On prompting, safety is passengers' top priority when flying

Even though passengers tend not to mention safety spontaneously, the evidence from the qualitative discussions that safety is implicitly passengers' number one priority is strongly validated in the quantitative survey.

When asked to rank the relative importance of potential priorities in the quantitative survey, safety is clearly passengers' number one priority when flying, followed by the cost of the ticket.

Both punctuality and environmental impact are secondary in this context, when compared to safety and ticket cost.



Q14, Thinking about the next time you fly, which of the following is most important to you?
Base: Those who are at least quite likely to fly in future (1,934)

However, punctuality is deemed more important for the most frequent flyers than for infrequent flyers.

Demographic trends: are there any differences in passenger priorities by region?

- In terms of the importance of cost and punctuality in different regions, there are only slight directional differences – no significant variations.

Attitudes towards delay

Delays are major cause of frustration when flying, especially if they disrupt plans

We learned from the qualitative phases, when flying for leisure, passengers see their time as valuable, and delays are described as frustrating and inconvenient.

However, some passengers accept or even expect some short delays when flying.

> *"When I'm flying, I'm happy to expect short delays - under an hour - because it comes with it and it wouldn't mess up any plans I had."* (18-24yrs)

Business travellers are more sensitive to delay and value punctuality, as delays could potentially cause them to miss prearranged transport connections or be late for meetings. Passengers flying for business report delays as extremely stressful.

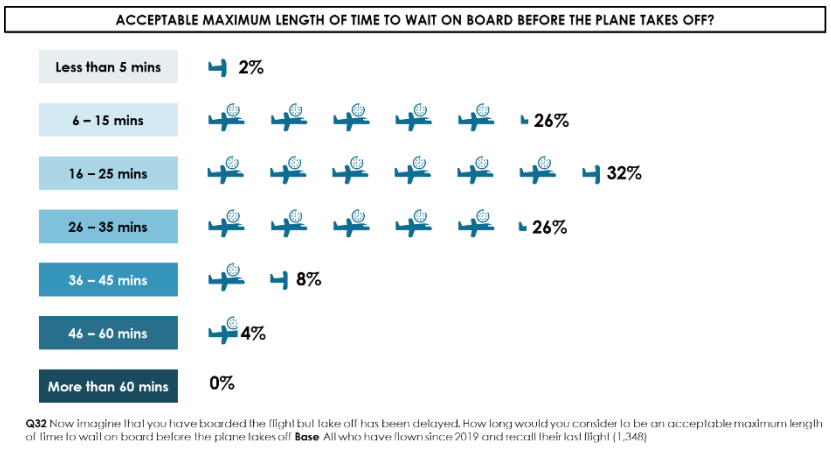
Case study

Sophie is a trainee accountant in her 20's living in London. When she travels for work in particular, it's important that the experience is as seamless as possible. She will specifically avoid airlines that have a bad reputation for delays as it's important that her trip runs to time, so she doesn't miss business meetings.

For all, longer delays are more frustrating than shorter delays since they are more likely to significantly impact passengers' journeys and subsequent plans; delays are most frustrating for passengers when they disrupt other time-specific plans.

If experiencing delays, passengers like to be kept informed about their situation, and it's important this information is as accurate as it can be. Passengers appreciate and value transparency with regards to communication of the length and cause of delays, as this enables them to adapt plans where possible or inform family, friends or colleagues.

Specifically considering a scenario where passengers have already boarded a flight but take off had been delayed, the median acceptable time for survey respondents to be held ***onboard*** before take-off is 16-25 minutes. There is less tolerance of having to wait among those taking business flights and (shorter) domestic flights for leisure.



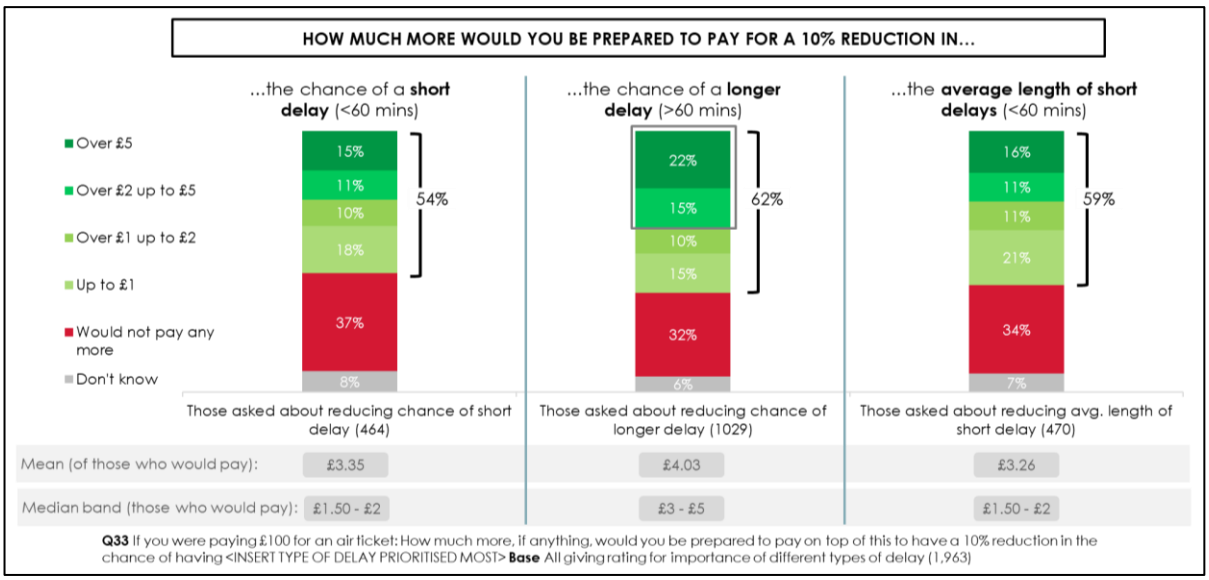
6 in 10 would pay more for a 10% improvement on delays:

Survey respondents were asked about how much they might pay for a 10% reduction in various types of delays, assuming they were paying £100 for a ticket. The amounts given provide a broad indication only.

Only around 6 in 10 stated they would be willing to pay more. Amongst those who would be prepared to pay more:

- For a 10% reduction in the **chance of a short delay**, the median amount they would pay is £1.50 - £2
- For a 10% reduction in the **average length of short delays**, the median amount is £1.50 - £2
- For a 10% reduction in the **chance of a longer delay**, the median amount is £3 - £5

Therefore, the data indicates that a slightly higher amount is deemed acceptable to pay for reducing the chance of **longer** delay.



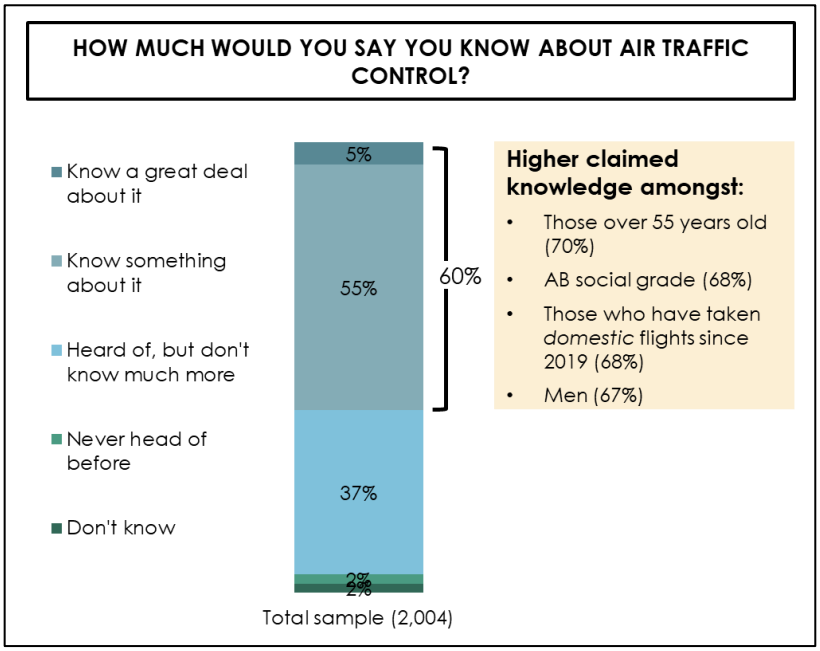
4. Air traffic control

How much do passengers know about Air Traffic Control?

Passengers generally don't feel they know much about Air Traffic Control

While nearly everyone completing the quantitative survey had heard of Air Traffic Control, few passengers claimed to know *a lot* about it. This reflects findings from the qualitative research that people don't tend to think much about Air Traffic Control – it is mostly invisible during people's travel experiences.

There are few significant differences in claimed knowledge of Air Traffic Control among different sections of the population. Older, higher social grade and male demographics are a little more likely than most to claim they know something about it, but even for these groups only a small minority say they know 'a great deal'.



While most people say they don't know much about Air Traffic Control, on further exploration, passengers' uninformed understanding of the Air Traffic Control system is, in fact, relatively accurate.

Although they do not have detailed knowledge, and make some incorrect assumptions, some core perceptions are accurate:

- Passengers assume that Air Traffic Control is managed by a monopoly provider.
- Passengers anticipate that each flight is overseen and monitored at all stages of its journey, with Air Traffic Control also helping each plane to take off and land.
- Many passengers view the role of Air Traffic Control as controllers monitoring and adjusting flightpaths as part of a bigger picture.
- Passengers' cost assumptions also relatively accurate – with guesses ranging from 80p to £5 on the cost of a ticket. Most assume that costs are passed on to flyers and shared across all flyers, but are not as significant as fuel, etc.
- However, there is almost no awareness of NATS or NERL, including very limited name recognition.

When we informed passengers about specific aspects of Air Traffic Control, there were few big surprises for passengers – much of the information that we presented in the focus groups aligned with their expectations, even if they were not previously aware of the details.

The only areas of uncertainty are:

- The international picture – how Air Traffic Control is managed around the globe, particularly above seas and oceans.

- Reliance on human input – a minority of passengers were surprised by the information that one controller manages each sector, and questioned whether there would be any back-up.

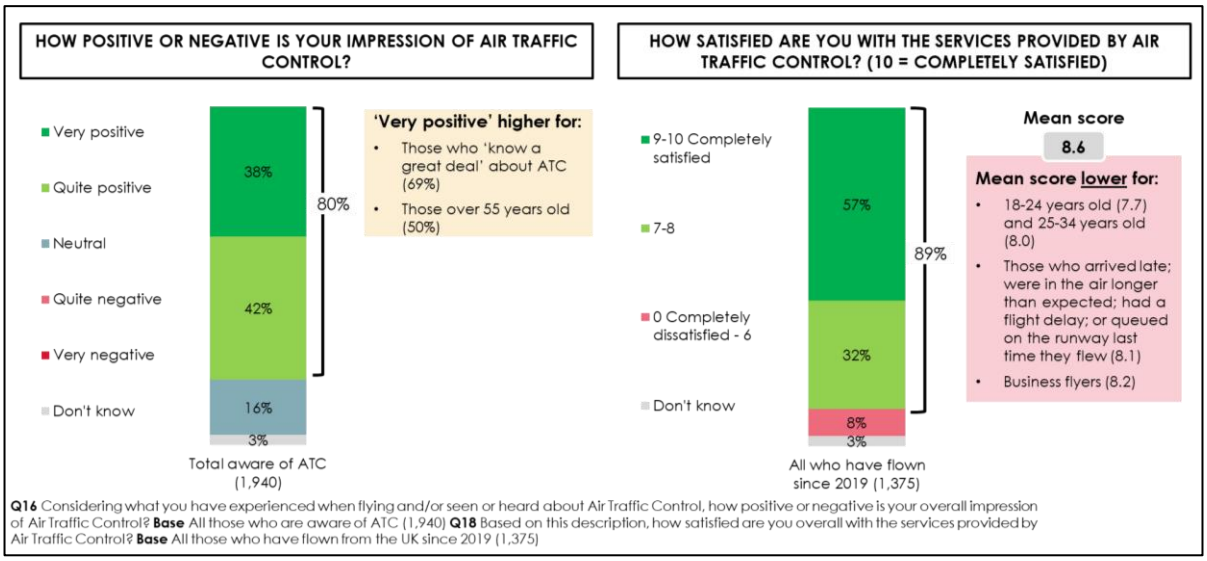
Impressions of Air Traffic Control

The large majority have a positive impression of Air Traffic Control

While passengers generally do not think about Air Traffic Control much, their impressions are nevertheless positive. The great majority – 8 in 10 of the quantitative survey respondents – have a positive impression of Air Traffic Control.

We note that the minority who claim to know a great deal about Air Traffic Control are even more strongly positive – suggesting that greater closeness to the industry leads to even greater appreciation of the job that Air Traffic Control does.

Furthermore, those who have flown since 2019 are largely satisfied with the services Air Traffic Control provides, with a strong average rating of 8.6 out of 10 for satisfaction. There are signs that those who have experienced issues with punctuality or hold-ups are *slightly* less satisfied, but even these groups rate their satisfaction above 8 out of 10 on average.



Q16 Considering what you have experienced when flying and/or seen or heard about Air Traffic Control, how positive or negative is your overall impression of Air Traffic Control? **Base** All those who are aware of ATC (1,940) **Q18** Based on this description, how satisfied are you overall with the services provided by Air Traffic Control? **Base** All those who have flown from the UK since 2019 (1,375)

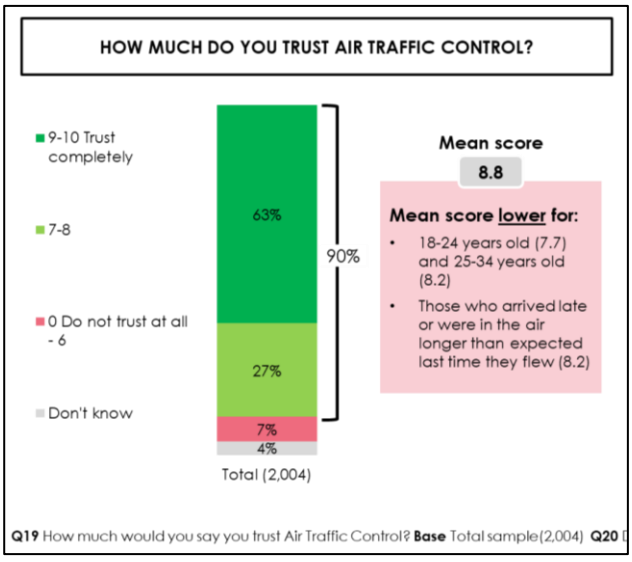
Trust in Air Traffic Control among UK passengers is near universal

9 in 10 passengers rate their trust in Air Traffic Control as 7 to 10 out of 10, with a mean score of 8.8.

Fewer than 1 in 10 have any concerns about Air Traffic Control.

There are few significant differences across different groups in terms of trust in Air Traffic Control, although the youngest age group are slightly less trusting (possibly due to lack of experience and / or knowledge).

On qualitative exploration, there are a number of factors behind this widespread trust:



Q19 How much would you say you trust Air Traffic Control? **Base** Total sample (2,004) **Q20**

- Passengers don't have to think about Air Traffic Control during their air travel experiences – it is an "invisible hand" guiding them to their destination.
- Air travel is safe, with problems relating to Air Traffic Control considered few and far between. Many see this as evidence that the system works well.
- These is an assumption that at least some, if not all, Air Traffic Control operations are automated, improving reliability and cutting out risk of human error.
- Becoming an Air Traffic Controller is considered very difficult, with a high degree of training and skill – the people who manage Air Traffic Control are inherently trustworthy.
- Some are aware of outstanding real-life examples of Air Traffic Control ensuring that passengers are safe, often through popular culture – such as the role of Air Traffic Control in the film *Sully*, and the role of Air Traffic Control in taking planes out of the sky after 9/11, as highlighted in a recent BBC documentary.

Passengers' most frequent touchpoints with Air Traffic Control are often linked to delays – some are aware of Air Traffic Controllers (typically overseas) going on strike and causing delays, or due to in-flight announcements (e.g. about re-routing around a storm).

However, it is rare that passengers blame Air Traffic Control for their delays. Many say that they would be much more inclined to blame their airline than Air Traffic Control, as so many other aspects of the flight seem to be in the airlines' control (e.g. organising an efficient boarding process).

Some also use Air Traffic Control to explain air travel to young children, either to reassure them of their safety or to generate excitement – for example, by pointing out the Air Traffic Control tower at an airport.

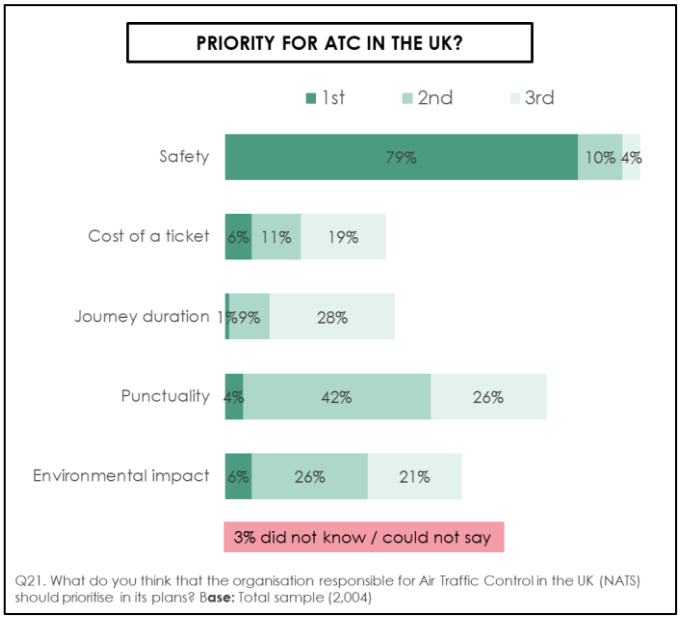
Case study

Laura is a project manager who lives in Reading with her boyfriend. When it comes to Air Traffic Control, she has only really heard of them when there's a voiceover from the pilot saying they're waiting for a space in the queue. When it comes to delays, she assumes it's something to do with the airline – they are the ones who seem to miss their 'slot' to leave.

Priorities for Air Traffic Control

Safety is emphatically passengers' number one priority for Air Traffic Control

When we ask passengers to think specifically about their priorities for UK Air Traffic Control (before information them about how Air Traffic Control might influence future outcomes) safety is *emphatically* passengers' number one consideration from a prompted list. It is a significantly higher priority even than when they think about their own priorities when next flying.



Q21. What do you think that the organisation responsible for Air Traffic Control in the UK (NATS) should prioritise in its plans? **Base:** Total sample (2,004)

Safety is followed by punctuality and environmental impact – and, relative to passengers' priorities for their own next flight, both of these grow in importance when thinking about Air Traffic Control specifically.

Qualitative discussions very much reinforce this picture:

While passengers don't expect to have to think about Air Traffic Control on a regular basis, they also expect that safety is paramount in everything that Air Traffic Control does. Passengers believe that the whole Air Traffic Control system should be geared towards ensuring the safety of all passengers.

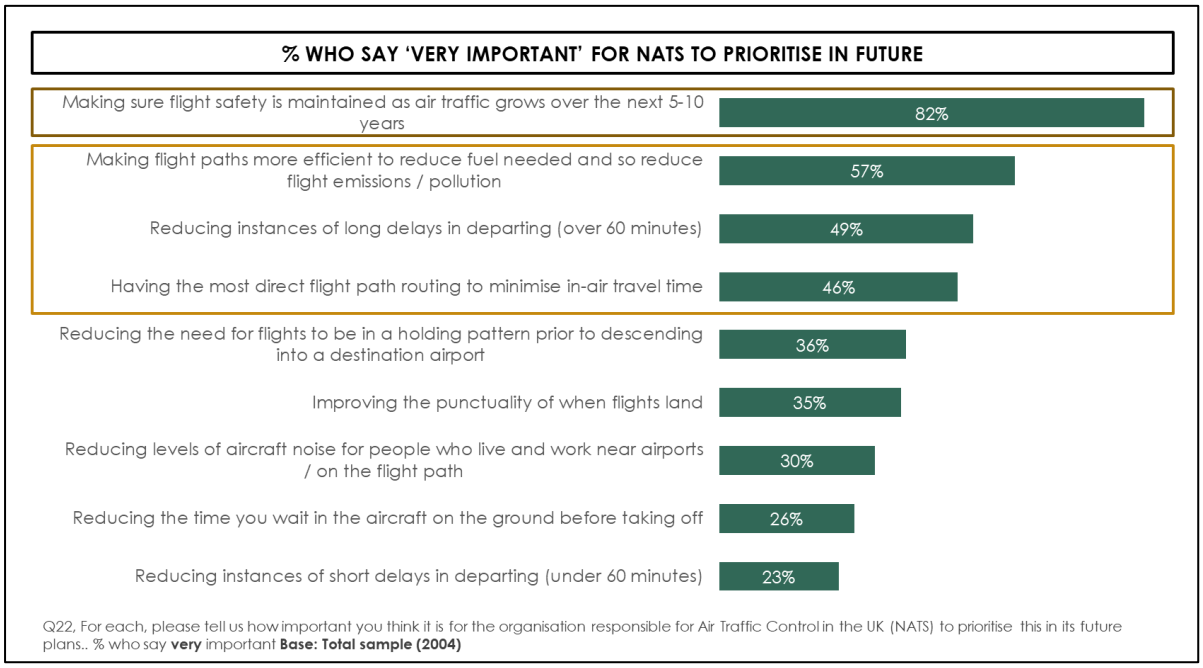
> *"I actually think it's only [number] 1, safety is the only thing."* (56+yrs)

Beyond this, punctuality is a clear second priority. Passengers want Air Traffic Control to operate in such a way that minimises delays – particularly long, trip-ruining delays (1hr+), but also shorter, frequent delays (under 60 mins) that add to the frustrations of air travel. However, this is not considered a major problem at the moment – particularly as many passengers assume that many of the delays they experience are not related to Air Traffic Control (i.e. more to do with delays loading the plane or as a result of schedules which are too tight).

In terms of uninformed priorities regarding Air Traffic Control, environmental considerations are less front-of-mind. Few passengers link the work of Air Traffic Control to the environmental impact of aviation (in other words, there is limited unprompted understanding of potential for improvements in route efficiency or of the impact that this would have in the fight against climate change).

After giving passengers more detail of specific potential future outcomes that NATS could influence, maintaining safety remains their dominant priority for Air Traffic Control, with environmental benefits rising up the agenda

We shared more detail of outcomes that NATS could prioritise in future in the quantitative research. While many are deemed to be important, the need to maintain flight safety dominates as most important of all.



After safety, improving flight path efficiency to reduce flight emissions and pollution gains the second highest importance rating. This emphasis on positive environmental outcomes is likely to be triggered by prompting respondents that it is possible for NATS to make a difference in this respect. (The qualitative research suggests that people's uninformed impression is that Air Traffic Control would already be operating efficient flight paths, with little scope for improving emissions).

Reducing *long* delays, and having the most direct flight paths for shorter travel time, are rated as the next most important outcomes.

Demographic trends: are there any specific differences for families?

- While there are not major differences in priorities for those with children of under 16 years old, there are indications that having to wait longer than expected and smaller impediments to progress, are slightly more of an issue for families.
- They are slightly more likely than non-families to say it is 'very important' for NATS to:
    - Improve punctuality of when flights land
    - reduce time waiting on the ground before take off
    - reduce instances of short delays.

5. Investment trade-offs

A range of factors are all deemed 'important' to passengers when asked what they think NATS should focus on in its future plans. To ascertain which passengers think are ultimately the highest priority areas, we introduced three areas that NATS could invest in, and asked survey respondents to trade each one off against keeping costs as low as possible.

NB: the below is a summary of what we showed. Full description can be found in the appendix.

Resilience

Ability to manage unexpected issues to minimise the chance of...
- your flight being delayed
- occasional major disruption

Punctuality and progress

Investing to...
- ensure flights take off on time
- have the most direct routes to minimise in-air travel time
- reduce being in a holding pattern before landing
- ensure flights land on time

Environment

- Greater efficiency of flights (lower CO2)
- Minimising NATS own CO2 emissions
- Reducing impact of aircraft noise on communities

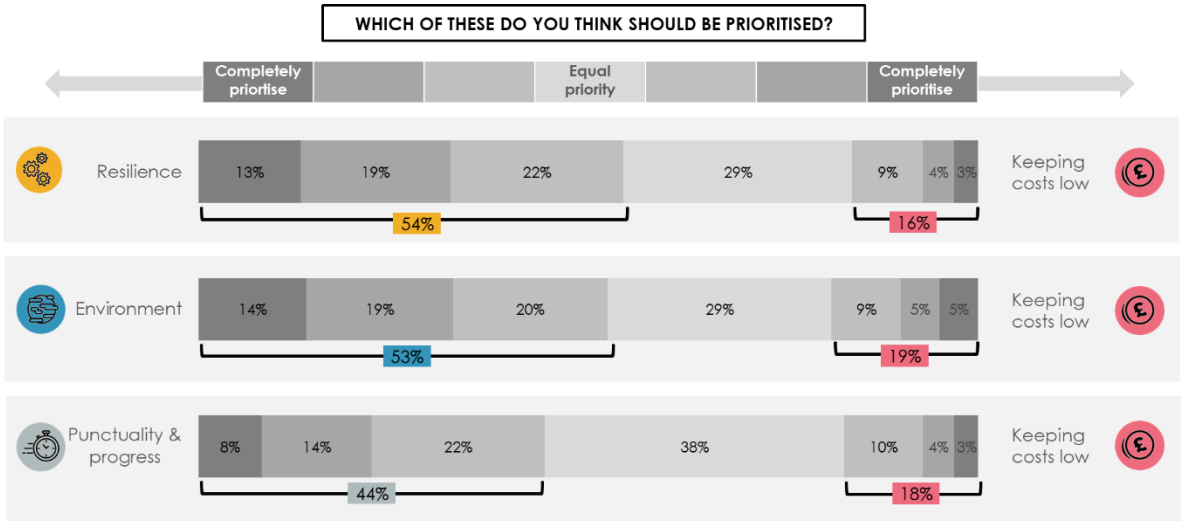
Keeping costs low

Keeping the amount you pay for Air Traffic Control through your airline ticket as low as possible

Summary of trade-off scores

All three investment areas outweigh keeping costs low

When trading off, resilience, environment and punctuality & progress are all generally seen to be higher priorities for NATS than keeping costs as low as possible. But a significant minority of passengers do want to see low costs as the priority. On balance, the areas of environment and resilience outweigh punctuality and progress.

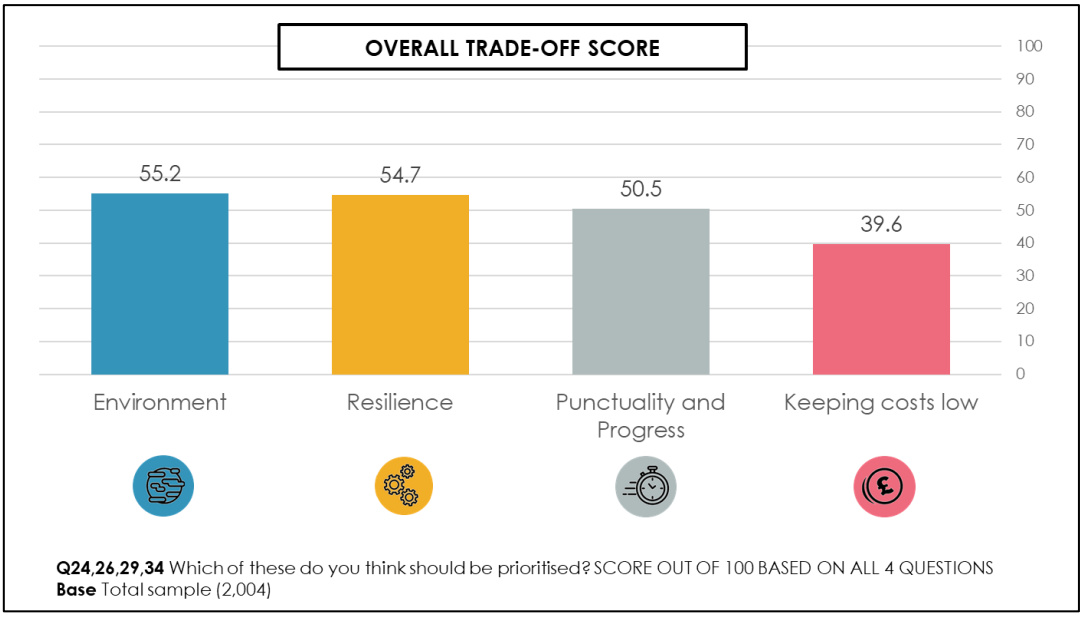


Q24,26,29 Please read statements A and B. Which of these do you think should be prioritised?
Base Total sample (2,004)

Respondents also traded off each of the investment areas against each other, to understand which were ultimately most important. From all the trade-off exercises, we generated an 'overall trade-off score' as a single measure to summarise the results:

- The three investment areas, and 'keeping costs low', were all traded off individually against each other
- The trade-off score summarises each one's prioritisation relative to all three of the others
- A score of 100 would mean everybody would '**completely** prioritise' this over **all** of the other three tested

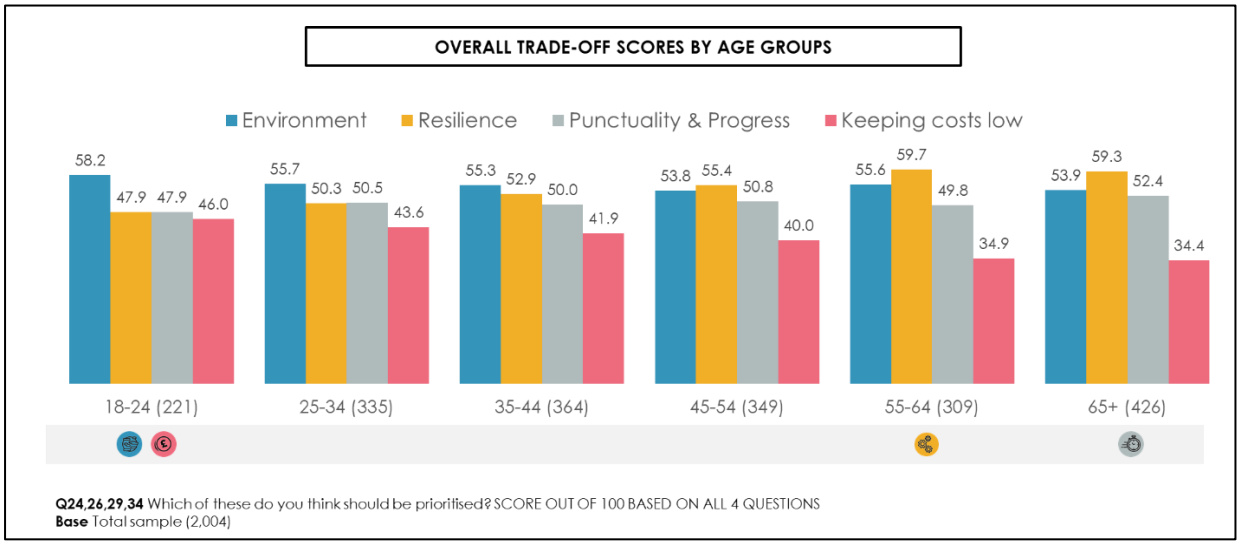
Based on the results of all the trade-off exercises, passengers' two highest priority areas for Air Traffic Control are environment and resilience – with very similar overall scores. These are followed by punctuality and progress, and lastly – some way behind – keeping costs low. For those who prioritise keeping costs low, we found from the qualitative groups that this was often down to overall satisfaction with the current service Air Traffic Control provide. These passengers did not feel it was essential to prioritise these areas over keeping costs low. This was especially true for those on a budget such as students.



Q24,26,29,34 Which of these do you think should be prioritised? SCORE OUT OF 100 BASED ON ALL 4 QUESTIONS
Base Total sample (2,004)

Demographic trends: are there any specific differences by age?

- The youngest group place the highest emphasis of any age group on the environment, and also on keeping costs low.
- The importance of resilience increases as we move through to higher age groups, as keeping costs low progressively declines.



Analysis of the trade-off score shows numerous other differences by specific subgroups:

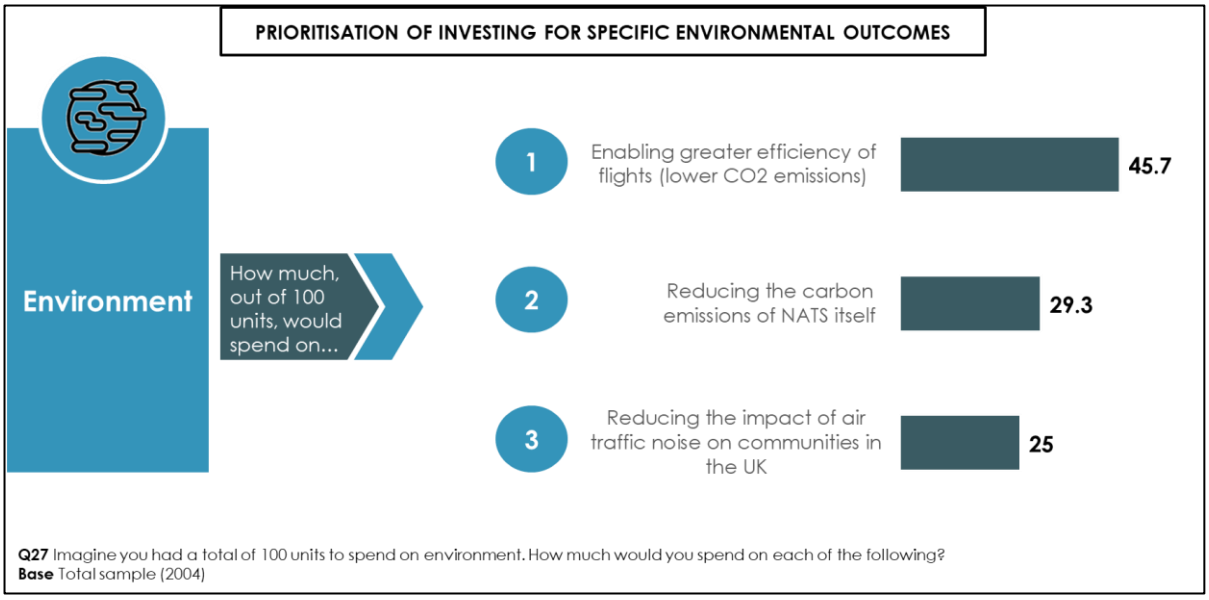
- Those who have flown most recently place more emphasis than other groups on NATS investing in punctuality and progress, and give a higher than average priority to keeping costs low. This may be due to recent experiences of slower progress and higher cost of travel post-COVID (time and expense of COVID tests and document checks etc).
- Those who typically fly more frequently also place slightly more emphasis on punctuality and progress.
- Those who have not flown for some time place more emphasis on environment and resilience.
- There are not any major differences in priorities for those with special assistance needs – although those with physical conditions emphasise resilience as a slightly higher priority.
- As we move to higher income brackets there is a slight movement to more priority on environment and punctuality, and less on low costs – but income is not a major factor.

"We all like a budget airline, we like a cheap flight if we can have one. But if we need to improve systems, a pound or two more on the ticket isn't going to be the end of the world is it? " (56+yrs)

Priorities within investment areas

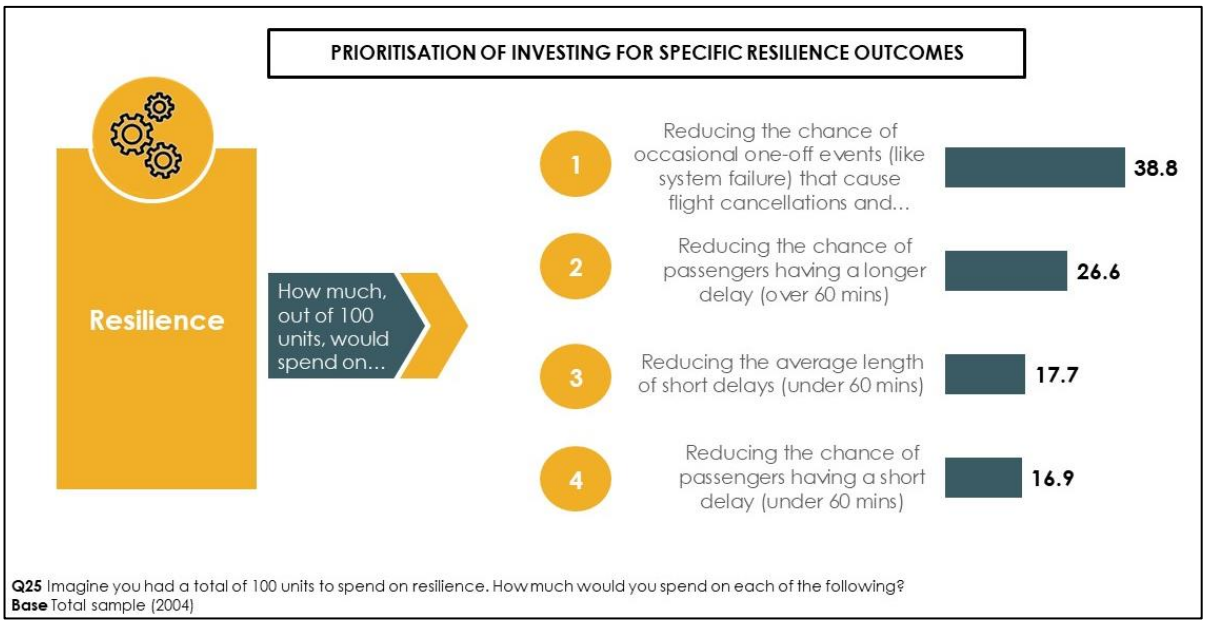
Within each of the investment areas, passengers completing the survey were asked how much they would spend (out of 100 units) on specific outcomes. This allowed us to understand the relative importance of specific issues related to the outcomes within each of the priority areas.

There's a clear indication from passengers that within the area of **environment** it's most important to spend on **more efficient flight paths to reduce flight CO2 emissions**. This is given substantially more weighting than both reducing the carbon emissions of NATS itself, and reducing the impact of air traffic noise on communities in the UK.



Within the area of **resilience**, there is also a clear hierarchy:

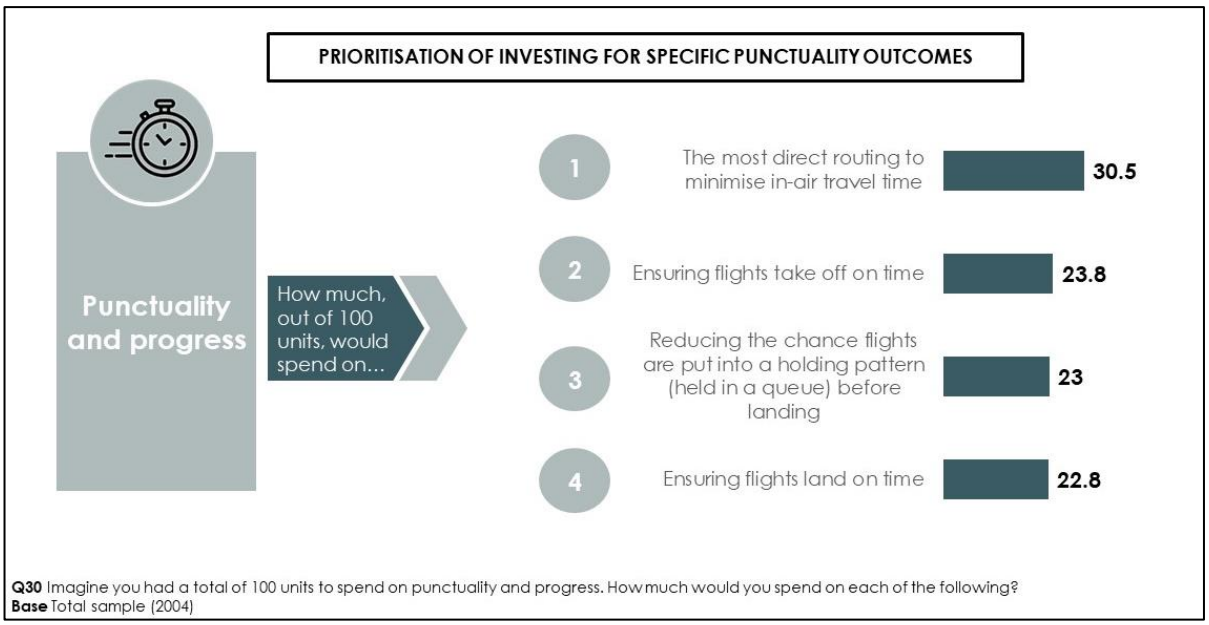
- By a large margin, the greatest weight is given to reducing the chance of occasional one-off events causing cancellations and major disruption. Qualitative discussions reinforce that passengers want these to happen as infrequently as possible. Cancellations and disruptions of this nature can have a massive impact on travel plans and the passenger experience is both stressful and frustrating. As well as this, some of the examples we shared (such as the voice failure a few years ago) are seen as scary – passengers believe it would actively undermine their trust in air travel if these happen too frequently.
- This is followed by reducing the chance of having a **longer** delay. Our group discussions affirm that these are considered very frustrating and are seen as an important priority for resilience. These delays can have a significant detrimental impact on enjoyment of flying. They make passengers more likely to consider other forms of travel where possible.



- Reducing average length of **short** delays and the likelihood of having **short** delays were allocated the least 'spend'. Passengers tell us that relatively frequent shorter delays are considered tolerable – up to 15-40 mins depending on short or long-haul flight.

"I just think there's a basic minimum about having resilience if an IT system fails because ultimately that might affect safety and the flow of the airport and profitability." (56+yrs)

Within the area of **punctuality and progress,** there is less of a hierarchy. 'Most direct routing to minimise in-air travel time' is given a slightly higher share of points allocation (even though qualitatively inefficient routes are not frequently mentioned by passengers as a major concern).

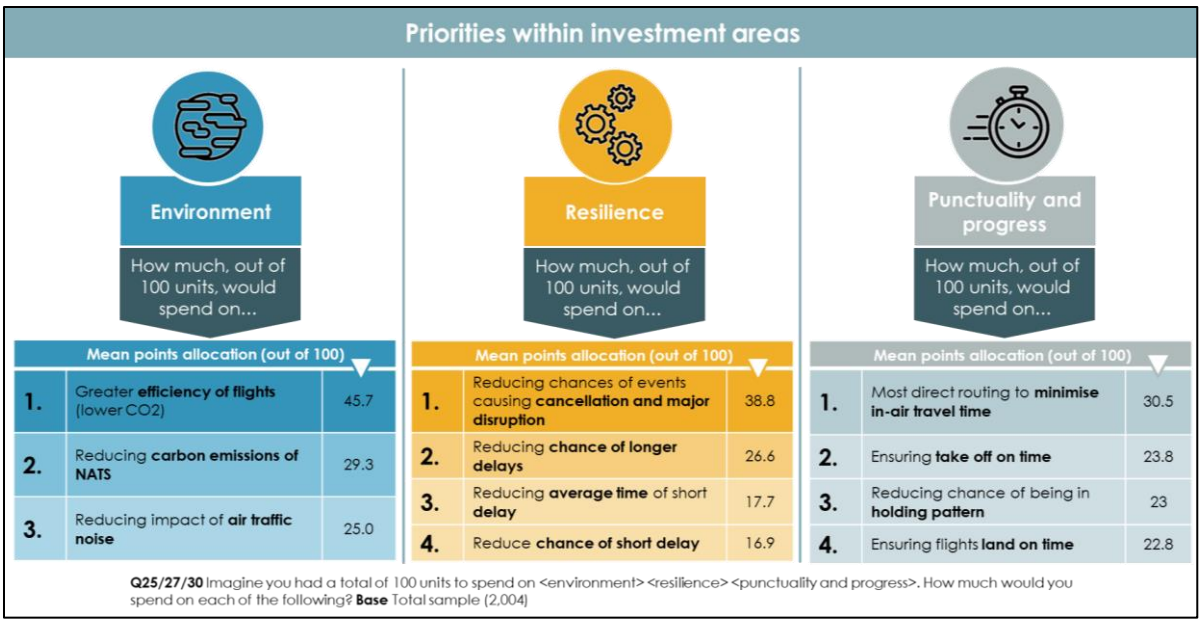


Q30 Imagine you had a total of 100 units to spend on punctuality and progress. How much would you spend on each of the following?
Base Total sample (2004)

The other three elements were allocated similar share of 'spend'.

- Qualitative discussions reveal that the use of holding patterns is seen as frustrating, but manageable – and passengers believe that they sometimes do not notice when they are in a holding pattern.
- Notably there is near identical prioritisation of spending on ensuring on-time departure and on-time arrival.

The weight of spend passengers give to specific components of all three investment areas is summarised below:



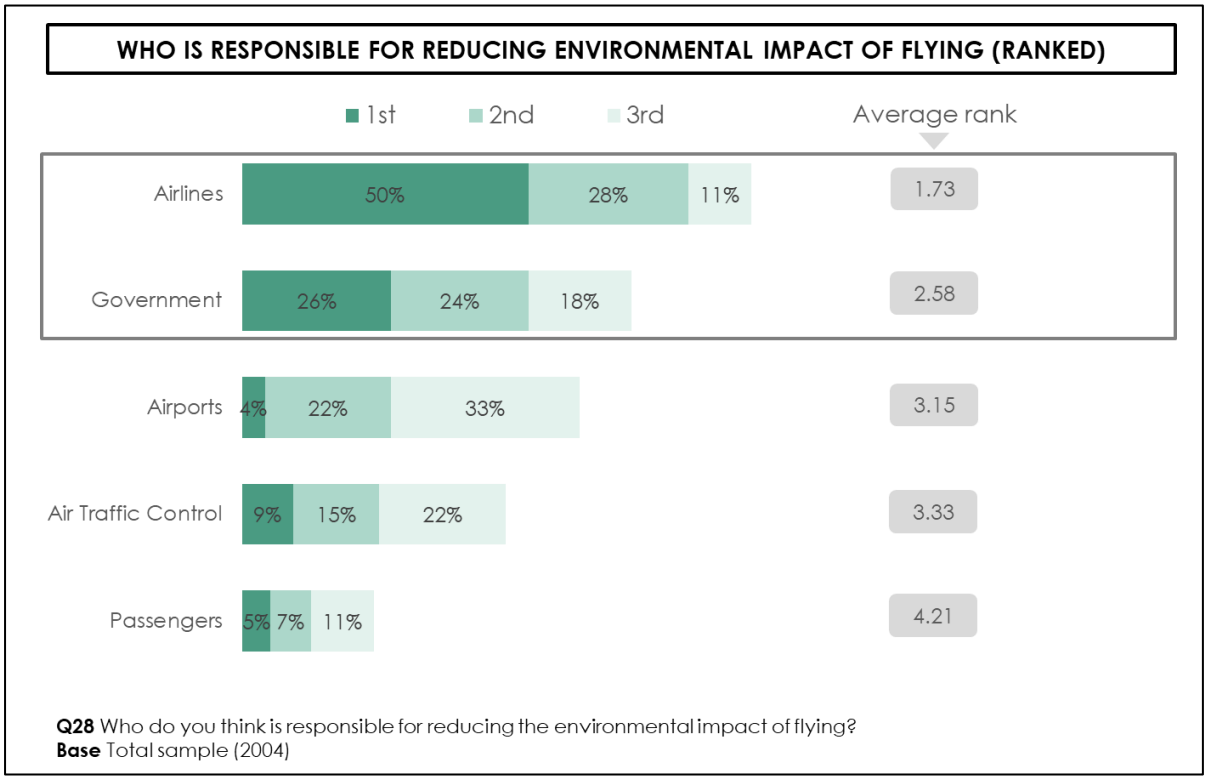
Passengers believe Air Traffic Control have a role when it comes to issues relating to the greend agenda

In the qualitative focus groups, we heard a significant emphasis on Air Traffic Control doing its part to reduce the environmental impact of aviation. Focus group participants repeatedly placed issues relating to the green agenda at or near the top of their priorities in deliberative trade-off exercises. Passengers spoke of the importance of reducing the environmental impact of aviation in the context of the wider fight against climate change – and often cited COP26 as indication of the importance of this.

The research was conducted over the weeks running up to COP26, with media coverage of climate change becoming ever more prominent at each phase of the project. It is important to consider this context in interpretation of the results. However, ongoing NATS research clearly evidences that there has been underlying growth in the salience of the green agenda among the public with regard to aviation over the longer term.

Airlines and government are thought most responsible for environmental impact of flying, but Air Traffic Control also has a role

Passengers think that the primary players in reducing the environmental impact of flying are airlines and government. Airports and Air Traffic Control are ranked as having less responsibility. Passengers themselves are, by some margin, bottom of the list.



Q28 Who do you think is responsible for reducing the environmental impact of flying?
Base Total sample (2004)

Many believe that the aviation industry is already taking steps to make flying more environmentally friendly. Air traffic control is not seen to be as responsible as airlines and government for minimising the environmental impact of aviation. However, on prompting and with further exploration, passengers nevertheless believe that it is an important role for NATS.

> *"Everyone's got to do their bit to reduce emissions and they've [Airlines] got to do it as well: Those who are producing the most have to do the most."* (56+yrs)

Many also think that there is a degree of personal responsibility here – as flying is considered an inherently "bad" thing to do in environmental terms.

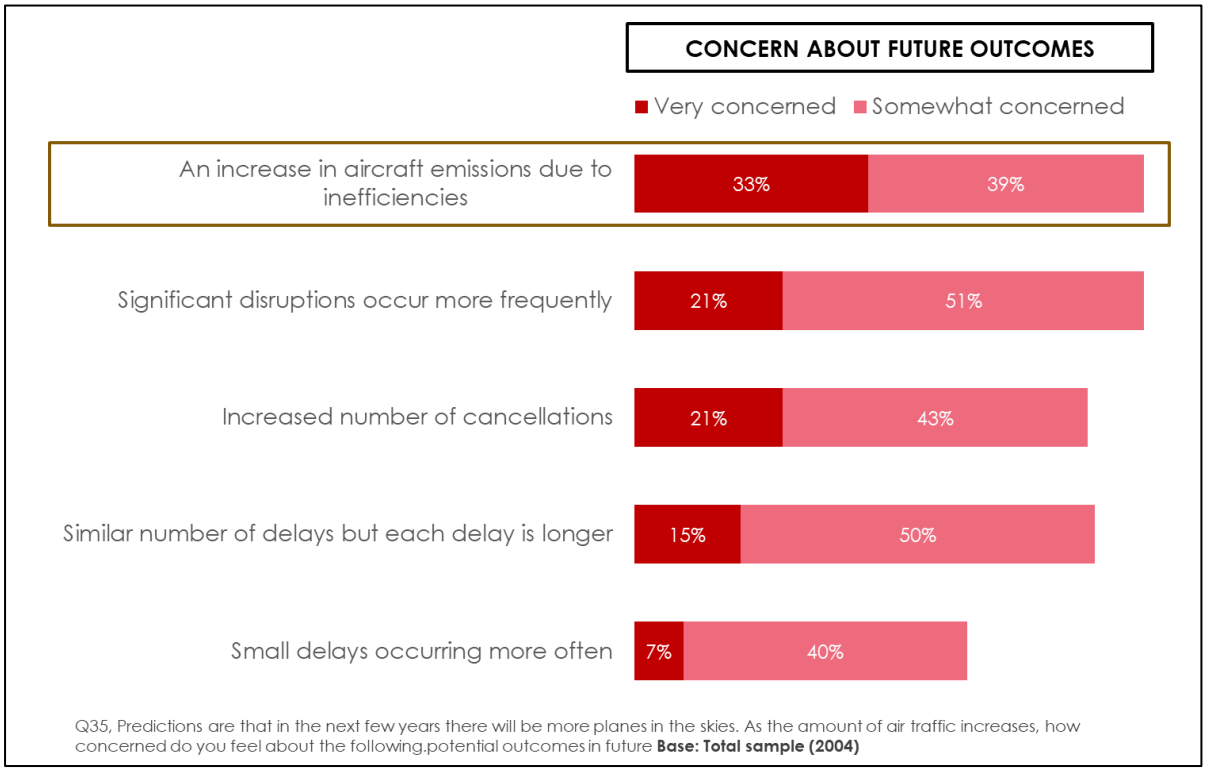
> *"I think it's needed more than ever, for them [Air Traffic Control] to look into how to make things more efficient and reduce the impact they're having."* (18-24yrs)

Case study

Kahina lives in Leeds and runs her own business. She was often faced with the dilemma of the environmental impact of flying, especially in her old job that required a lot of travel including domestic flights. She would love to see the industry work to reduce the environmental impact of flying because in some scenarios she just didn't have a choice but to fly as she needed to get from place to place as quickly as possible.

Looking ahead, environmental impact is at the forefront of concerns

As air traffic grows in the future, passengers are most fearful about the growth of aircraft emissions. In terms of elements of resilience, future worries reflect priorities now – more concern over disruptions and cancellations than delays, and longer delays much more of a concern than small delays.



Q35, Predictions are that in the next few years there will be more planes in the skies. As the amount of air traffic increases, how concerned do you feel about the following.potential outcomes in future **Base: Total sample (2004)**

Demographic trends: are there any differences by customer group?

- Higher concern about **increased emissions** among long haul business flyers and those with special assistance needs
- Higher concern about **more significant disruptions** among the most frequent flyers and passengers aged 65+
- Higher concern about **longer delays** and **small delays occurring more often** among business flyers

Investing in new technology is expected and considered important

In the final qualitative research phase, we explored investment in both new and current technology. Passengers expect that the aviation industry will and should always be investing and exploring new technology. It's considered important to implement new technology so that air travel remains safe but also so that it is as efficient and cost effective as possible. It is well understood that there is investment in this area and it is accepted that part of your plane ticket will go towards this investment.

Passengers assume that new technology will enable the industry to make air travel more environmentally friendly. Passengers believe that reducing environmental impact should be one of the positive outcomes from introducing new technology. However, it's important to note that passengers find it difficult to separate what is within the remit of the aircraft industry vs. Air Traffic Control.

Efficiency is considered the key area for Air Traffic Control to focus on when it comes to technology. Both new and current technology performed well when assessed in the qualitative groups.

> *"I expect they'd be doing some sort of investment and keeping up to date with the latest technology - without all that, they're never going to solve some of the*

environmental issues and reducing the amount of time people are in the air." (18-35yrs)

Investing in current technology is also deemed important, especially from an environmental perspective

Investing in current technology is considered an essential, as technology is developing so quickly that all industries are having to adapt to keep up to date. Passengers are well-versed with the concept of technology 'outdating' and not being compatible with newer systems or processes. Keeping up to date is considered especially important from a safety and security perspective.

Passengers are conscious of industries being wasteful and prefer the idea of trying to fix something before replacing it. This is important for both financial and environmental reasons. However, safety and security should never be compromised and it's important to put this first.

Similarly as for new technology, there is willingness to pay for this investment.

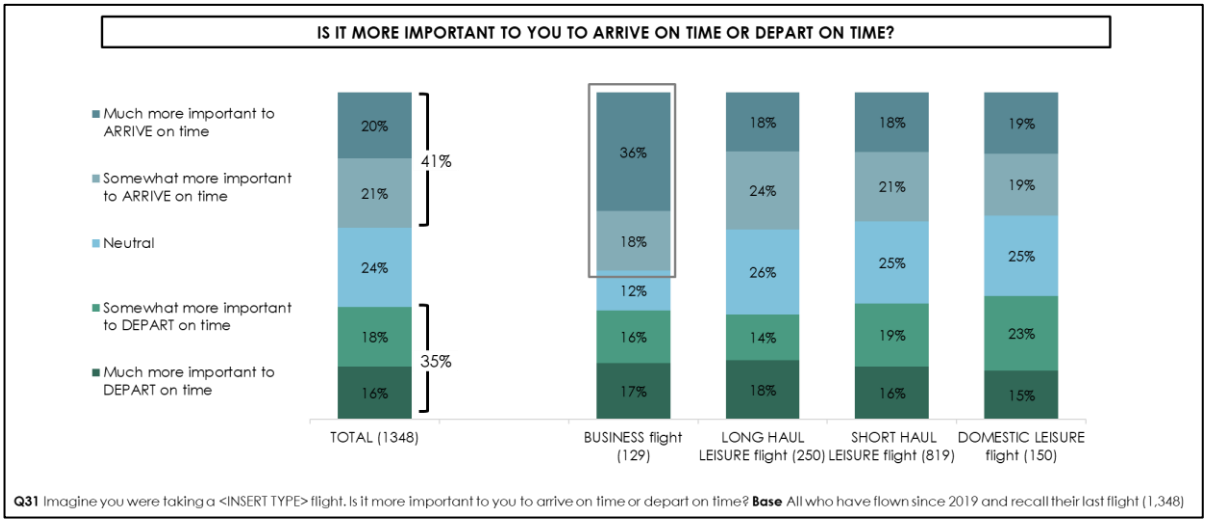
"If you have good tech, new and existing, things are safer and that allows you to change what you've got to make planes flying more economical." (56+yrs)

6. Departure vs. arrival punctuality

Passengers are split on whether it's better to depart on time or arrive on time:

Overall, thinking specifically of the type of flight they most recently took, there's no consensus on whether it's more important to arrive on time or to depart on time. Overall, 41% think it is more important to arrive on time versus 35% who think it is more important to depart on time. 24% are neutral. In the qualitative research, we found that passengers rarely had very strong views on this.

Those who last flew for business reasons place greater importance on time of **arrival** (54% think arrival time is more important, as opposed to 33% saying departure time).



Demographic trends: are there any differences for arriving on time vs. departing on time?

Aside from business flyers, some other groups have slightly different preferences.

- Preferring to **arrive** on time is slightly more prevalent among:
  - The most **frequent flyers** (those flying 4+ times in 2019) – 52%
  - Those with **highest household income** (£70k +) **–** 48%
  - **AB** social grade - 47%
- Preferring to **depart** on time is slightly more prevalent among:
  - Those **with children under 16 years old –** 44%

In the qualitative focus groups, we provided more information on the set-up of the current Air Traffic Control system (to prioritise departure time), and on the relative pros and cons of focussing on departure time or arrival time. We asked passengers whether they had a preference for one system or the other.

> *"I'd rather be stuck at the [departure] airport for an extra hour than stuck circling in the air for an extra hour and then worrying about onward transport."* (18-35yrs)

Passengers rarely had very strong views on this, suggesting that the focus of the system is not a priority for them relative to other issues we discussed with them. On balance, however, having had time to discuss and reflect in the focus groups there was a preference for focussing on arrival time – with passengers saying that this was more important to them than departure time.

Specifically, passengers said that more predictable arrival times would be beneficial, whether for business travel (to ensure getting to meetings on time) or leisure (to maximise holiday time / ensure a speedy return home). Those reliant on public transport and / or travel provided by friends or family highlighted how more predictable arrival times would save time, hassle and potentially money.

There were some dissenting voices, however. These passengers find it difficult to understand the advantages of changing the focus of the Air Traffic Control system – for many, the system works well already and delays related to Air Traffic Control are rare. This status quo bias leads to a mindset of "if it ain't broke, don't fix it".

7. ADS-B

We introduced information about ADS-B in the focus groups – this included information about the system overall and followed on to explain the benefits in terms of safety, environment and capacity.

When asked about this, passengers were overwhelmingly very positive about ADS-B. Above all, it was the safety benefits which drove positivity – specifically, updates of flight position every 14 minutes prompted alarm and passengers wanted more frequent monitoring than this. An update every 8 seconds felt like a significant improvement. The system described is considered an efficient, high-tech and safe solution to supplement the current system

The environmental benefits shown in the information were considered positive, but were a secondary priority.

The ability to increase capacity was less important to passengers who didn't necessarily see this as a benefit to them. In fact, a small sample were worried that increased capacity and more aircraft in the sky will lead to even more environmental damage from the aviation industry.

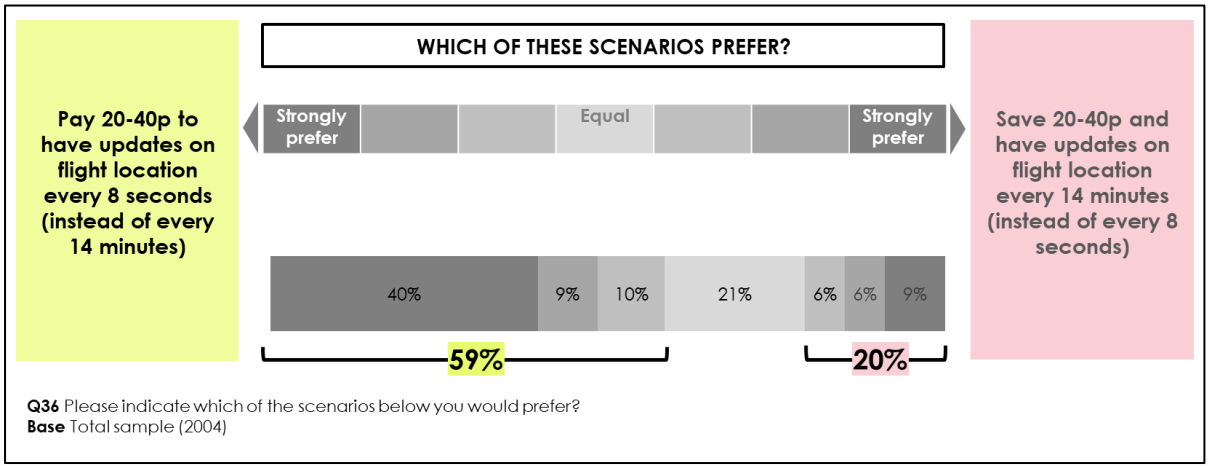
We then explored costs and informed passengers about how much it costs – and in the focus groups, passengers told us that they were happy to pay this for what they felt were significant safety benefits.

We also explored ADS-B in the quantitative research, where we explained ADS-B in slightly less detail due to space / time constraints. We provided information about safety benefits but not about the environmental / capacity benefits. In this context, there is a clear preference to pay for the safety benefits of ADS-B.

> "I'd definitely be happy for them to keep using this system and a portion of my plane ticket to go towards this; it seems like a positive development." (56+yrs)

On balance, when presenting ADS-B, there is a clear preference to pay for the benefit:

On balance, after an explanation of ADS-B primarily in the context of safety, there's a clear preference to pay for the benefit rather than save the money paid:



Q36 Please indicate which of the scenarios below you would prefer?
Base Total sample (2004)

Who is more likely to pay for ADS-B?

- 55-64 years old - 69%
- >£70k income – 68%
- Most frequent flyers (4+ in 2019) – 66%

8. Appendix

Phase 1 Discussion Guide

Summary of approach – Phase 1
3 x 90-minute online focus groups with c. 5 participants per group.
The groups are broken down as follows:

- Group 1 – 18-35yrs
- Group 2 – 36-55yrs
- Group 3 – 55+yrs

About this discussion guide:
We will use the discussion guide flexibly, to structure the conversations and as a prompt for potentially useful lines of questioning rather than as a script for all interviews to follow.
Our senior research team will use their understanding of the research objectives and their expertise of exploring respondents' views to depart from the discussion guide plan where necessary.

Introductions and warm-up (5 mins)

Moderator to introduce themselves and Blue Marble to the group

- *Explain:*
  - *This project is all about people's experience when traveling by air. We want to learn all about their behaviours, experiences, what works and what doesn't at various stages.*
  - *There are no right or wrong answers - we want their honest opinions.*
  - *We will be recording the session*
  - *What they say will only be used for internal research purposes*
  - *We may have some observers watching from our team and/or from the end client team. We'll reveal the client's name at the end of the session.*

Moderator to ask each respondent to introduce themselves in turn:

  - *Name, age, occupation*
  - *Who's at home*

Thanks everyone, great to meet you all. I'd now like to do a quick exercise. I'm going to say something and I want you to tell me what words come to your head when I say "Air Travel"

  - *Moderator to note down on paper all the words the respondents say*
  - *Moderator to go through the words starting with the positive and ending with the negative, probing on each fully to understand where that association comes from*
  - *Probe: any mention of issues relating to air traffic control*

Priorities for air travel (15 mins)

Moderator to thank everyone and explain we are now going to share screen and show a diagram that shows the steps people go through when taking a flight - ***Show slide A***

Moderator to go through each stage in turn repeating the below questions for each stage, with specific focus on 'en route' and 'holding' stages of the journey

- We're going to go through each stage of the travel journey starting with 'departures':
    - How do you find this part of the journey?
        - What works well?
        - What doesn't work well?
    - What are your top priorities at this point? What needs to happen for a positive experience?
    - What do you want to avoid happening? What can lead to a negative experience?
    - How can this impact your journey as a whole?
    - How does this vary depending on:
        - Who you're travelling with?
        - Whether the trip is long haul vs. short haul?
        - Reason for travel?

Probe, if mentioned: air traffic control, punctuality, environmental issues, speed, safety, service

Ensure we get sufficient detail e.g. what exactly does a 'good experience' look like

Specific probes:

- *HOLDING:*
    - *Any mention of delay/late arrival*
    - *Any mention of environmental impact*

Unprompted priorities for air traffic control (15 mins)

Moderator to explain that we're now going to focus on a specific area of air travel. Moderator to share screen with slide reading "Air traffic control" - ***Show slide B***

- I want to know what you think of when you see this? What words, images, feelings come up?

Moderator to ask respondents to type their thoughts into the Zoom chat.

Moderator to give participants a bit of time to share their thoughts, then go through them, probing on each word/image/feeling to ensure it is fully understood

- Great, now let's discuss in a bit more detail...
- What do you understand by air traffic control?
    - What does it mean?

    - How does it work?
- Who is responsible for air traffic control?
    - What sort of organisation or organisations manage this?
    - What do they do?
    - What sorts of people work for them?
- How much of your ticket do you think goes towards Air Traffic Control
- To what extent, if at all, do you have any concerns about air traffic control?
    - *Probe: do you trust it?*
- Tell me about all the ways that air traffic control affects you during a flight?

Moderator to show the journey diagram from earlier to jog memory and aid discussion - ***Show slide A***

- Thinking about the 'role' of air traffic control, what would you expect them to be doing? Have a look at the diagram and explain how this might differ during each stage of the journey.

Informed priorities for air traffic control (20 mins)

Moderator to explain that we are now going to explain air traffic control in more detail to give them a quick introduction to what it is and how it works and how it can affect passengers.

- *Short video: What do air traffic controllers do -* ***Show slide C (video)***
- *Walk through 'a flight' – London to Edinburgh -* ***Show slide D***
- *Talk through how the UK has different FIRs -* ***Show slide E***

- What are your first thoughts about what I've just shown you?
- What didn't you know?
- Is that what you'd expect air traffic control to do?
- Was there anything surprising in there?
- Is there anything here that's confusing?
- What questions do you have?

Moderator to show diagram of air travel journey - ***Show slide A***

- Now that we've explored exactly what air traffic control do, let's take another look at the air travel journey.
- What would you ideally like air traffic control to be doing/providing at each stage of this journey?

Assessment of potential trade-offs (35 mins)

Moderator to explain: We're now going to look at something a little different. NATS have some decisions to make when it comes to how they structure their services in future, and they want to find out what their customers think to help inform and shape these decisions. We're going to present you with some scenarios and options and want to find out what you think.

Moderator to read out short summary of a key trade-off relating to future planning of air traffic control, and repeat to ensure participants have understood.

Moderator then to ask follow-up questions to explore consumer views on the trade-off:

- To what extent, if at all, is everything clear here?
- What further information, if any, would you like?
    - What questions, if any, do you have?
- Based on the information I've just given you, what should be the most important consideration when thinking about this trade-off?
    - What would you prioritise? Why?
    - What concerns, if any, would you have?
- How important or otherwise is this issue to you?

Moderator then to repeat for 2 more trade-offs. Moderator to cover 3 trade-offs in each session, selected according to a rotation matrix that ensures all trade-offs are discussed in at least 2 of the focus groups.

Summary, thanks and close

Phase 2 Quantitative Questionnaire

Section 1 Demographics

ASK ALL
Q1. How would you describe your gender? **(SC)**

1. Male
2. Female
3. Other
4. Prefer not to answer

CHECK QUOTAS

ASK ALL
Q2. How old are you?

WRITE IN

CHECK QUOTAS

ASK ALL
Q3. Please select the region where you live **(SC)**

SHOW MAP

1. East Anglia
2. East Midlands
3. Greater London
4. North East
5. North West
6. South East (not London)
7. South West
8. West Midlands
9. Yorkshire and the Humber
10. Scotland

11. Wales
12. Northern Ireland
13. Other **[SCREEN OUT]**

CHECK QUOTAS

ASK ALL
Q4. Please indicate to which occupational group the Chief Income Earner in your household belongs, or which group fits best. This could be you or someone else: The Chief Income Earner is the person in your household with the largest income.

If the Chief Income Earner is retired and has an occupational pension please answer for their most recent occupation.
If the Chief Income Earner is not in paid employment but has been out of work for less than 6 months, please answer for their most recent occupation. **(SC)**

1. **Higher managerial / professional / administrative** (e.g. Established doctor, Solicitor, Board Director in a large organisation [200+ employees, top level civil servant/public service employee])
2. **Intermediate managerial / professional / administrative** (e.g. Newly qualified doctor (under 3 years), Solicitor, Board director in small organisation, Middle manager in large organisation, Principal officer in civil service / local government)
3. **Supervisory or clerical / junior managerial / professional / administrative** (e.g. Office worker, Student Doctor, Foreman with 25+ employees, Salesperson etc.)
4. **Skilled manual worker** (e.g. Skilled Bricklayer, Carpenter, Plumber, Painter, Bus / Ambulance Driver, HGV driver, AA patrolman, Pub / Bar Worker etc.)
5. **Semi or unskilled manual work** (e.g. Manual workers, All apprentices to be skilled trades, Caretaker, Park keeper, Non-HGV driver, Shop assistant)
6. **Student**
7. **Casual worker (incl. on zero hours contract)/not in permanent employment**
8. **Housewife / Homemaker**
9. **Retired and living on state pension only**
10. **Unemployed or Unable to work**
11. **Full-time carer of other household member**
12. **Other**

A [CODES =1]
B [CODES =2]
C1 [CODES =3 OR 6]
C2 [CODES =4]
D [CODES =5]
E [CODES =7-8-9-10-11-12]
CHECK QUOTAS

Section 2 Air Travel Behaviour

ASK ALL
Q5. When was the last time you flew from a UK airport? This could have been either to travel within the UK or to go abroad? **(SC)**

1. This year (during 2021)
2. 2020 - **after** the pandemic / lockdown started
3. 2020 – **before** the pandemic / lockdown started
4. 2019
5. 2017 or 2018
6. Longer ago
7. Never
8. Have flown from a UK airport, but can't remember when

ASK ALL WHO HAVE MADE ANY TRIPS BY AIR SINCE THE BEGINNING OF 2019 (CODE 1-4 AT Q5)
Q6. How many trips by air, if any, did you make **in 2019**? Please count outward and return flights and any transfers as one trip. **(SC)**

1. 0
2. 1
3. 2-3
4. 4-5
5. 6-10
6. Over 10
7. Can't remember

ASK ALL WHO HAVE MADE ANY TRIPS BY AIR SINCE THE PANDEMIC (CODE 1 OR 2 AT Q5)
Q7. And how many trips by air, if any, have you made since the widespread outbreak of Covid-19 in March 2020? **(SC)**

1. 0
2. 1
3. 2-3
4. 4-5
5. 6-10
6. Over 10
7. Can't remember

ASK ALL
Q8. How likely are you to travel by air in future? **(SC)**

1. Definitely
2. Very likely
3. Quite likely
4. Not likely
5. Definitely not
6. Don't know

CLOSE SURVEY IF NOT FLOWN SINCE 2019 (CODE 5-8 AT Q5) AND NOT LIKELY TO TRAVEL BY AIR IN FUTURE (CODE 4 OR 5 AT Q8)

ASK ALL WHO HAVE FLOWN SINCE BEGINNING OF 2019 (CODE 1-4 AT Q5)
Q9. Which of the following types of flights have you made **since the beginning of 2019**? **(MC)**

1. Domestic (within UK) – for leisure
2. Domestic (within UK) – for business
3. Shorter international (up to 5 hours) – for leisure
4. Shorter international (up to 5 hours) – for business
5. Long-haul (Over 5 hours) – for leisure
6. Long-haul (Over 5 hours) – for business
7. Don't know / can't remember **(EXCLUSIVE)**

ASK ALL WHO HAVE FLOWN SINCE BEGINNING OF 2019 (CODE 1-4 AT Q5) AND CODE >1 ANSWER AT Q9

Q10. And what best describes **the most recent flight** you have taken from a UK airport? **(SC) ONLY DISPLAY OPTIONS SELECTED AT Q9.**

1. Domestic (within UK) – for leisure
2. Domestic (within UK) – for business
3. Shorter international (up to 5 hours) – for leisure
4. Shorter international (up to 5 hours) – for business
5. Long-haul (Over 5 hours) – for leisure
6. Long-haul (Over 5 hours) – for business
7. Don't know / can't remember

ASK ALL WHO CODE 1-6 AT Q10 (RECALL MOST RECENT FLIGHT FROM A UK AIRPORT)

Q11. From which UK airport did you depart on **your most recent** flight? **(SC, FIXED ORDER ALPHABETICAL)**

1. Belfast International
2. Birmingham
3. Bristol
4. Cardiff
5. East Midlands
6. Edinburgh
7. Glasgow
8. Leeds Bradford
9. Liverpool
10. London City
11. London Gatwick
12. London Heathrow
13. London Luton
14. London Stansted
15. Manchester
16. Newcastle
17. Other (specify)
18. Don't know / can't remember

ASK ALL WHO CODE 1-6 AT Q10 (RECALL MOST RECENT FLIGHT FROM A UK AIRPORT)
Q12. During this most recent journey departing from a UK airport, did you experience any of the following?

RANDOMISE ORDER (SC PER STATEMENT)	Yes	No	Don't know / can't remember
Long queues/crowding in the airport	1	2	3
Flight delay	1	2	3
Flight cancelled	1	2	3
Delay at immigration	1	2	3
Delay taking off after boarding the aircraft	1	2	3
Queuing on the runway to take off for longer than expected	1	2	3
Flight diverted to an alternative destination	1	2	3
Being in the air for longer than expected	1	2	3
Being in the air for less time than expected	1	2	3
Being held in a holding pattern (flying a circular course) while waiting to land	1	2	3
Arriving at the destination airport late	1	2	3
Waiting on the plane longer than expected once you'd landed	1	2	3

ASK ALL WHO CODE 'FLIGHT DELAY' AT Q12
Q13. You mentioned a flight delay: can you remember how long this delay was? **(SC)**

1. Less than half an hour
2. Between half an hour and 1 hour
3. Between 1 and 2 hours
4. Between 2 and 3 hours
5. Over 3 hours
6. Don't know / can't remember

Section 3 Priorities for air travel

ASK THOSE WHO ARE AT LEAST QUITE LIKELY TO FLY IN FUTURE (Q8 CODE 1-3)
Q14. Thinking about the next time you fly, which of the following is most important to you? Place in order of priority with 1 being the most important to you. **RANDOMISE ORDER; RANKING QUESTION**

1. Cost of a ticket
2. Environmental impact
3. Punctuality
4. Journey duration
5. Safety

Section 4 Unprompted awareness and knowledge of air traffic control

ASK ALL
Q15. How much would you say you know about Air Traffic Control? **(SC)**

1. I know a great deal about it
2. I know something about it
3. I have heard of this before but don't know much more about it
4. I have never heard of this before
5. Don't know

ASK ALL WHO HAVE AT LEAST HEARD OF AIR TRAFFIC CONTROL (Q15 CODE 1-3)
Q16. Considering what you have experienced when flying and/or seen or heard about Air Traffic Control, how positive or negative is your overall impression of Air Traffic Control and Air Traffic Controllers? **(SC)**

1. Very positive
2. Quite positive
3. Neutral
4. Quite negative
5. Very negative
6. Don't know

ASK ALL WITH AN IMPRESSION OF ATC (Q16 CODE 1-5)
Q16b. Why do you say your overall impression is <INSERT ANSWER FROM Q16>?

1. **WRITE IN**
2. Don't know

ASK ALL WHO HAVE AT LEAST HEARD OF AIR TRAFFIC CONTROL (Q15 CODE 1-3)
Q17. Were you aware before today that part of the price of airline tickets goes to Air Traffic Control organisations to pay for their services?

1. Yes, I was aware of this
2. No, I was not aware of this

Section 5 Prompted views of air traffic control

DISPLAY TO ALL: Air Traffic Control is the system used to manage airspace around the world. Air traffic controllers manage flightpaths and monitor progress in line with internationally agreed standards. This enables a safe operation of aircraft and enables flights to depart and arrive on time.

ASK ALL WHO HAVE TAKEN FLIGHTS SINCE BEGINNING OF 2019 (CODE 1-4 AT Q5)
Q18. Based on this description, how satisfied are you overall with the services provided by Air Traffic Control? **(SC)**

1. 0 – completely dissatisfied
2. 1
3. 2
4. 3
5. 4
6. 5
7. 6
8. 7
9. 8
10. 9
11. 10 – completely satisfied
12. Don't know

ASK ALL
Q19. How much would you say you trust Air Traffic Control? **(SC)**

1. 0 – do not trust at all
2. 1
3. 2
4. 3
5. 4
6. 5
7. 6
8. 7
9. 8
10. 9
11. 10 – trust completely
12. Don't know

ASK ALL
Q20. Do you have any concerns about Air Traffic Control? If so, please write in what they are below. **(SC)**

1. Yes - **WRITE IN**
2. No
3. Don't know

DISPLAY TO ALL
The organisation responsible for Air Traffic Control in the UK (NATS) needs to make future plans for what it invests in.

ASK ALL
Q21. What do you think that **the organisation responsible for Air Traffic Control in the UK** (NATS) should prioritise in its plans? Place in order of priority with 1 being the most important to you. **RANDOMISE ORDER (RANKING QUESTION)**

1. Cost of a ticket
2. Environmental impact
3. Punctuality
4. Journey duration
5. Safety
6. Don't know

ASK ALL
Q22. We'll now describe some ways in which Air Traffic Control services can influence different aspects of flying. For each, please tell us how important you think it is for the organisation responsible for Air Traffic Control in the UK (NATS) to prioritise this in its future plans. **RANDOMISE ORDER**

A. Making sure flight safety is maintained as air traffic grows over the next 5-10 years
B. Reducing instances of **short** delays in departing (under 60 minutes)
C. Reducing instances of **long** delays in departing (over 60 minutes)
D. Reducing the time you wait in the aircraft on the ground before taking off
E. Having the most direct flight path routing to minimise in-air travel time
F. Making flight paths more efficient to reduce fuel needed and so reduce flight emissions / pollution
G. Improving the punctuality of when flights land
H. Reducing the need for flights to be in a holding pattern (queuing) prior to descending into a destination airport
I. Reducing levels of aircraft noise for people who live and work near airports / on the flight path

1. Very important
2. Somewhat important
3. Neutral
4. Somewhat unimportant
5. Very unimportant
6. Don't know

Section 6 Future challenges

DISPLAY TO ALL: NATS, the company responsible for managing Air Traffic Control in UK airspace, has some decisions to make about its future investment, and it wants to find out what people think to help inform this. We'll now describe some areas it could invest in and ask you what you think.

NB Safety will always remain the number one priority of NATS, and none of the future investment options would compromise safety in any way

RANDOMISE ORDER OF DISPLAY OF INVESTMENT AREAS a) to c)

a) RESILIENCE SECTION

DISPLAY TO ALL: We'd now like you to think about **resilience**. By resilience, we mean the ability to predict and manage any potential for surprise and failure. In Air Traffic Control, resilience might be about being able to withstand an IT system failing, Air Traffic Controllers being affected by a virus or a radar going offline.

Improving resilience requires investment - and there is a trade-off between how much is invested and how resilient the system is (as well as what it is resilient to). *Safety is never compromised as part of this*.

Better resilience would mean that events like flight delays and occasional major disruption would be less likely to happen.

ASK ALL
Q24. Please read statements A and B below by clicking on them. Which of these do you think should be prioritised? Please indicate how much of a priority by choosing a point on the scale. **REVERSE ORDER FOR HALF SAMPLE**

REVERSE ORDER FOR HALF SAMPLE

Completely prioritise			Equal priority			Completely prioritise
1	2	3	4	5	6	7
Resilience Ability to manage unexpected issues to minimise the chance of… • …your flight being delayed • …occasional major disruption						**Keeping costs low** Keeping the amount you pay for Air Traffic Control through your airline ticket as low as possible

ASK ALL
Q25. Imagine you had a total of 100 units to spend on resilience. How much would you spend on each of the following? **(POINT ALLOCATION EXERCISE) RANDOMISE ORDER.**

1. Reducing the chance of passengers having **a short delay** (under 60 mins)
2. Reducing the chance of passengers having **a longer delay** (over 60 mins)
3. Reducing the **average length** of **short delays** (under 60 mins)
4. Reducing the chance of occasional one-off events (like system failure) that cause flight cancellations and major disruption

b) ENVIRONMENT SECTION

DISPLAY TO ALL: NATS could invest in new ways to help reduce the impact of air travel on **the environment**, including:

- Investing to enable planes to fly the most efficient routes and creating new air traffic control tools to assist with managing the flow of air traffic. This greater efficiency would reduce fuel needed and aircraft CO2 emissions.
- Investing to reduce the carbon footprint of NATS itself, reducing its own carbon emissions and generating its own renewable energy.
- Making changes to reduce the impact of noise of air traffic in communities in the UK.

The amount invested in these areas will affect the extent to which and how quickly these environmental benefits are realised (if at all).

ASK ALL
Q26. Please read statements A and B below by clicking on them. Which of these do you think should be prioritised? Please indicate how much of a priority by choosing a point on the scale. **REVERSE ORDER FOR HALF SAMPLE**

REVERSE ORDER FOR HALF SAMPLE

Completely prioritise			Equal priority			Completely prioritise
1	2	3	4	5	6	7
Environment • Greater efficiency of flights (lower CO2) • Minimising NATS own CO2 emissions • Reducing impact of aircraft noise on communities						**Keeping costs low** Keeping the amount you pay for Air Traffic Control through your airline ticket as low as possible

ASK ALL
Q27. Imagine you had a total of 100 units to spend on environment. How much would you spend on each of the following? **(POINT ALLOCATION EXERCISE) RANDOMISE ORDER.**

1. Enabling greater efficiency of flights (lower CO2 emissions)
2. Reducing the carbon emissions of NATS itself
3. Reducing the impact of air traffic noise on communities in the UK

ASK ALL
Q28. Who do you think is responsible for reducing the environmental impact of flying? Please rank the following from '1' to '5' where '1' is most responsible and '5' is least. **RANKING QUESTION. RANDOMISE ORDER**

1. Airlines
2. Air traffic control
3. Airports
4. Government
5. Passengers

6. None of these / cannot say **(EXCLUSIVE)**

c) PUNCTUALITY AND PROGRESS SECTION

DISPLAY TO ALL: NATS could invest in new ways to improve **punctuality** of flights (meeting the scheduled times for take-off and landing) and ensuring that passengers feel they are **making progress** – reducing in-air travel time and minimising the need for flights to be put into a holding pattern before landing.

We would like to understand your views on this.

ASK ALL
Q29. Please read statements A and B below by clicking on them. Which of these do you think should be prioritised? Please indicate how much of a priority by choosing a point on the scale. **REVERSE ORDER FOR HALF SAMPLE**

REVERSE ORDER FOR HALF SAMPLE

Completely prioritise			Equal priority			Completely prioritise
1	2	3	4	5	6	7
Punctuality and progress Investing to… • …ensure flights take off on time • …have the most direct routes to minimise in-air travel time • …reduce being in a holding pattern before landing • …ensure flights land on time						**Keeping costs low** Keeping the amount you pay for Air Traffic Control through your airline ticket as low as possible

ASK ALL
Q30. Imagine you had a total of 100 units to spend on punctuality and progress. How much would you spend on each of the following? **(POINT ALLOCATION EXERCISE) RANDOMISE ORDER.**

1. Ensuring flights take off on time
2. Reducing the chance flights are put into a holding pattern (held in a queue) before landing
3. The most direct routing to minimise in-air travel time
4. Ensuring flights land on time

ASK ALL
Q31. **IF CODED 1-6 AT Q10 (description of last flight) ADD EXTRA TEXT**:<Imagine you were taking a <INSERT MOST RECENT FLIGHT TYPE CODED AT Q10>. Is it more important to you to arrive on time or depart on time? **(SC)**

1. Much more important to depart on time
2. Somewhat more important to depart on time
3. Neutral
4. Somewhat more important to arrive on time
5. Much more important to arrive on time

ASK ALL
Q32. Now imagine that you have boarded the flight but take off has been delayed. How long would you consider to be an acceptable maximum length of time to wait on board before the plane takes off? **(SC)**

1. Less than 5 minutes
2. 6-15 minutes
3. 16-25 minutes
4. 26-35 minutes
5. 36-45 minutes
6. 46-60 minutes
7. More than 60 minutes
8. No length of time would be acceptable

ASK ALL
Q33. If you were paying £100 for an air ticket: How much more, if anything, would you be prepared to pay on top of this to have <INSERT TEXT AS PER INSTRUCTION BELOW>? **(SC)**

INSTRUCTION TO SCRIPTER:

IF ALLOCATE MOST POINTS TO OPTION 1 AT Q25, insert text 'a 10% reduction in the chance of having a short delay (under 60 mins)'

IF ALLOCATE MOST POINTS TO OPTION 2 AT Q25, insert text 'a 10% reduction in the chance of having a longer delay (over 60 mins)'

IF ALLOCATE MOST POINTS TO OPTION 3 AT Q25, insert text 'a 10% reduction in the average length of short delays (under 60 mins)'

IF ALLOCATE IDENTICAL POINTS TO 2 OR MORE OF OPTIONS 1-3 AT Q25, RANDOMISE CHOICE OF TEXT FROM HIGHEST SCORING OPTIONS

1. I would not be prepared to pay any more on top of my ticket price
2. Up to £0.10p
3. Over £0.10p up to £0.25p
4. Over £0.25p up to £0.50p
5. Over £0.50p up to £1.00
6. Over £1.00 up to £1.50
7. Over £1.50 up to £2
8. Over £2 up to £3
9. Over £3 up to £5
10. Over £5 up to £10
11. Over £10

12. Don't know

ASK ALL

Q34. Thinking again about these investment areas please indicate where do you want the priority to be?

RANDOMISE ORDER OF ROWS AND FLIP FOR HALF SAMPLE

Completely prioritise			Equal priority			Completely prioritise
1	2	3	4	5	6	7
Resilience Ability to manage unexpected issues to minimise the chance of… • …your flight being delayed • …occasional major disruption						**Punctuality and progress** Investing to… • …ensure flights take off on time • …have the most direct routes to minimise in-air travel time • …reduce being in a holding pattern before landing • …ensure flights land on time
Punctuality and progress Investing to… • …ensure flights take off on time • …have the most direct routes to minimise in-air travel time • …reduce being in a holding pattern before landing • …ensure flights land on time						**Environment** • Greater efficiency of flights (lower CO2) • Minimising NATS own CO2 emissions • Reducing impact of aircraft noise on communities
Environment • Greater efficiency of flights (lower CO2) • Minimising NATS own CO2 emissions • Reducing impact of aircraft noise on communities						**Resilience** Ability to manage unexpected issues to minimise the chance of… • …your flight being delayed • …occasional major disruption

ASK ALL

Q35. Predictions are that in the next few years there will be more planes in the skies. As the amount of air traffic increases, how concerned do you feel about the following potential outcomes in future?

1. Very concerned
2. Somewhat concerned
3. Neutral
4. Somewhat unconcerned
5. Very unconcerned

A. Small delays occurring more often
B. Similar number of delays but each delay is longer
C. Increased number of cancellations
D. An increase in aircraft emissions due to inefficiencies
E. Significant disruptions occur more frequently

DISPLAY TO ALL: The number one priority for Air Traffic Control will always be safety. As part of its planning, NATS want to understand what people expect with regard to safety, and how much they are willing to pay for enhanced safety.

ASK ALL

Q36. New satellite technology used by NATS has made it possible for air traffic control to receive more frequent updates when monitoring aircraft flying over the ocean (updates every 8 seconds, instead of every 14 minutes as it was previously).

The cost of using this technology is passed on to consumers as part of their airline ticket price. On average, a passenger flying across the Atlantic pays 20-40 pence for this as part of their ticket price.

Please indicate which of the scenarios below you would prefer? **(SC) REVERSE ORDER FOR HALF SAMPLE**

REVERSE ORDER FOR HALF SAMPLE

Strongly prefer					Equal			Strongly prefer		
0	1	2	3	4	5	6	7	8	9	10
Pay 20-40p to have updates on flight location every 8 seconds (instead of every 14 minutes)								Save 20-40p and have updates on flight location every 14 minutes (instead of every 8 seconds)		

DISPLAY TO ALL: And finally, just a few more questions about you and your household. If you do not wish to answer the next two questions which relate to sensitive personal information, please just select the 'prefer not to answer' option.

ASK ALL
Q37. Do you have a **non-physical** disability or condition that makes accessing and/or using airports or flying difficult? e.g. affecting thinking, remembering, learning, communications, mental health or social relationships? **(SC)**

1. Yes
2. No
3. Don't know
4. Prefer not to answer

ASK ALL
Q38. Do you have a **physical** disability or condition that makes accessing and/or using airports or flying difficult? e.g. affecting your movement, balance vision or hearing **(SC)**

1. Yes
2. No
3. Don't know
4. Prefer not to answer

ASK ALL
Q39. Do you have any children of under 16 years old? **(SC)**

1. Yes
2. No
3. Prefer not to answer

ASK ALL
Q40. What is your total household income per year from all sources, before tax and other deductions? **(SC)**

1. Less than £10,000
2. £10,000- £14,999
3. £15,000 - £19,999
4. £20,000 – £29,999
5. £30,000 –£39,999
6. £40,000 – £49,999
7. £50,000 – £59,999
8. £60,000 –£69,999
9. £70,000- £79,999
10. £80,000-£89,999
11. £90,000- £99,999
12. £100,000 or more
13. Prefer not to answer

ASK ALL
Q41. Do you or a member of your household own a car that you are able to use? **(SC)**

1. Yes
2. No
3. Don't know

THANK AND CLOSE

Phase 3 Qualitative Discussion guide

Summary of approach – Phase 3
Blue Marble will be conducting 5 x 90-minute online focus groups with c. 5 participants per group.
The groups are broken down as follows:

- Group 1 – 18-35yrs
- Group 2 – 36-55yrs
- Group 3 – 56+yrs
- Group 4 – 18-24yrs
- Group 5 – Recent and frequent flyers

About this discussion guide:
We will use the discussion guide flexibly, to structure the conversations and as a prompt for potentially useful lines of questioning rather than as a script for all interviews to follow.
Our senior research team will use their understanding of the research objectives and their expertise of exploring respondents' views to depart from the discussion guide plan where necessary.

Section 1: Introductions and warm-up (5 mins)

Moderator to introduce themselves and Blue Marble to the group

- *Explain:*
  - *This project is all about people's experience when traveling by air. We want to learn all about their behaviours, experiences, what works and what doesn't at various stages.*
  - *There are no right or wrong answers - we want their honest opinions.*
  - *We will be recording the session*
  - *What they say will only be used for internal research purposes*
  - *We may have some observers watching from our team and/or from the end client team. We'll reveal the client's name at the end of the session.*

Moderator to ask each respondent to introduce themselves in turn:

  - *Name, age, occupation*
  - *Who's at home*

Thanks everyone, great to meet you all. I'd now like to do a quick exercise. I'm going to say something and I want you to tell me what words come to your head when I say "Air Travel"

  - *Moderator to note down on paper all the words the respondents say*
  - *Moderator to go through the words starting with the positive and ending with the negative, probing on each fully to understand where that association comes from*
  - *Probe: any mention of issues relating to air traffic control*

Section 2: Unprompted priorities for air traffic control (10 mins)

Moderator to explain that we're now going to focus on a specific area of air travel. Moderator to share screen with slide reading "Air traffic control" - ***Show slide A reading "Air Traffic Control"***

- I want to know what you think of when you see this? *Moderator to ask respondents to type their thoughts into the Zoom chat.*

- Great, now let's discuss in a bit more detail...
- What do you understand by air traffic control?
    - What does it mean?
    - How does it work?
- Who is responsible for air traffic control?
    - What sort of organisation or organisations manage this?
    - What do they do?
    - What sorts of people work for them?
- To what extent, if at all, do you have any concerns about air traffic control?
    - *Probe: do you trust it?*

Section 3: Informed priorities for air traffic control (10 mins)

Moderator to explain that we are now going to explain air traffic control in more detail to give them a quick introduction to what it is and how it works and how it can affect passengers.

- *Short video: What do air traffic controllers do* – ***Show slide***
- *Walk through 'a flight' Edinburgh to London* - ***Show slide C***
- What are your first thoughts about what I've just shown you?
- What didn't you know?

Moderator to show diagram of air travel journey - ***Show slide D***

Now that we've explored exactly what air traffic control do, let's take a look at the air travel journey

- What would you ideally like air traffic control to be doing/providing at each stage of this journey?

Moderator to show prompted list of actions ATC could be doing - ***Show slide E***

Ask participants to pick top 2 or 3 actions from the list that they'd prioritise

Section 4: Assessment of potential investment areas (prev. trade-off options) (20 mins)

Moderator to explain: We're now going to look at something a little different. NATS have some decisions to make when it comes to how they structure their services in future, and they want to find out what their customers think to help inform and

shape these decisions. We're going to present you with some of the areas NATS are looking at and want to see what you think.

Moderator to read out short summary of an area NATS are looking to invest in/improve relating to future planning of air traffic control and repeat to ensure participants have understood.

Show slides:

- ***F – Resilience***
- ***G – Green Agenda***
- ***H – Investing in new tech***
- ***I – Investing in updating current technology***

Moderator then to ask follow-up questions after reading out description of each area in turn, to explore consumer views (rotate order for each group):

- Is this something you've ever thought about before?
- How often do you think of this in the context of air travel?
- To what extent, if at all, is everything clear here?
    - What further information, if any, would you like?
    - What questions, if any, do you have?
- How important or otherwise is this issue to you?
    - Why is it important?

Section 5: Comparing potential investment areas (15 mins)

Moderator to show slide with 4 potential investment areas ***Show slide J***

- Now that we've explored all areas, I'd like you to individually rank them from which you think is the most important to the least important

Moderator to ask all participants to share their rankings and note down

- Let's start with the most important – tell me why you think this is the most important area for ATC to invest in?
- For the least important – why do you think this isn't as important?

We're now going to discuss costs. Imagine you've paid £100 for a plane ticket to travel somewhere. This £100 is made up of lots of small costs from fuel for the plane, to staff on board the plane and at the airport, to ensuring baggage control runs smoothly. ATC also makes up part of that cost – about £1-2. Some of these costs may go up in future, e.g. if fuel prices increase or if we want to improve efficiency of baggage control.

There is a lot of pressure on the cost of a plane ticket as numerous factors may affect whether costs go up or down. It's expected that prices for air tickets will go up in the near future due to the impact of COVID. Whilst it's £1-2 now for ATC it is predicted to go up by about 20% more and then return to previous levels.

- Thinking back to that £100 ticket, how much extra would you be willing to pay as an investment in the areas we've discussed? (Bearing in mind that other

areas of the ticket price may also need to go up in future, or could come down)

OK I now want to imagine that for that £100 ticket, ATC is going to spend an additional £4 on investing in some of those areas. Imagine you have been put in charge of how that £4 is distributed amongst those investment areas.

- Individually, please decide how you'd like to distribute the £4. You also have the option not to spend the £4 at all, or only spend part of it.

Once decided, Moderator to invite participants to type their breakdowns into the group chat.

Moderator to show a visual summary of how the respondents have distributed the money across the investment areas. ***Show slide K***

- Tell me why you've chosen to distribute the money this way?
- If choosing to spend less than £4, please explain why?
- If choosing to spend none at all, please explain why? Is there anything else that you would be willing to spend the extra £4 on?

Explore the areas with most and least investment

Section 6: Arrival vs. departure punctuality (15 mins)

Moderator to explain that we are now going to talk about punctuality

- For you, how important is it that your flight departs on time?
  - Why is this important?
- How important is it that you flight arrives on time?
  - Why is this important?
- Which is more important, departing or arriving on time?

Moderator to show Arrival vs Departure slide - ***Show slide L and M***

- What are your first thoughts?
- Do you think ATC should continue to focus on departure time or should start focusing more on arrival time?

Section 7: Assessment of introduction of ADS-B (15 mins)

Moderator to show introductory video to ADS-B ***Show slide N***

Moderator to explain that ADS-B is something that has already been implemented and ATC are trying to understand if it's something worth keeping

- What are your initial thoughts or questions on this?
- What is the reason for introducing ADS-B, do you think?
- What are the benefits?
  - *Probe: to them? to companies involved in ATC?*
- Do you have any concerns or questions?

Moderator to explain that as well as safety benefits, using ADS-B allows ATC to increase capacity as they can run planes closer together. This also increases the

number of routes they can allow across the Atlantic because they have better oversight, including some routes that are more economical.

- Do you feel that ADS-B is important? If so, in what ways? If not, why not?
- How do you feel about the cost implication of introducing ADS-B?

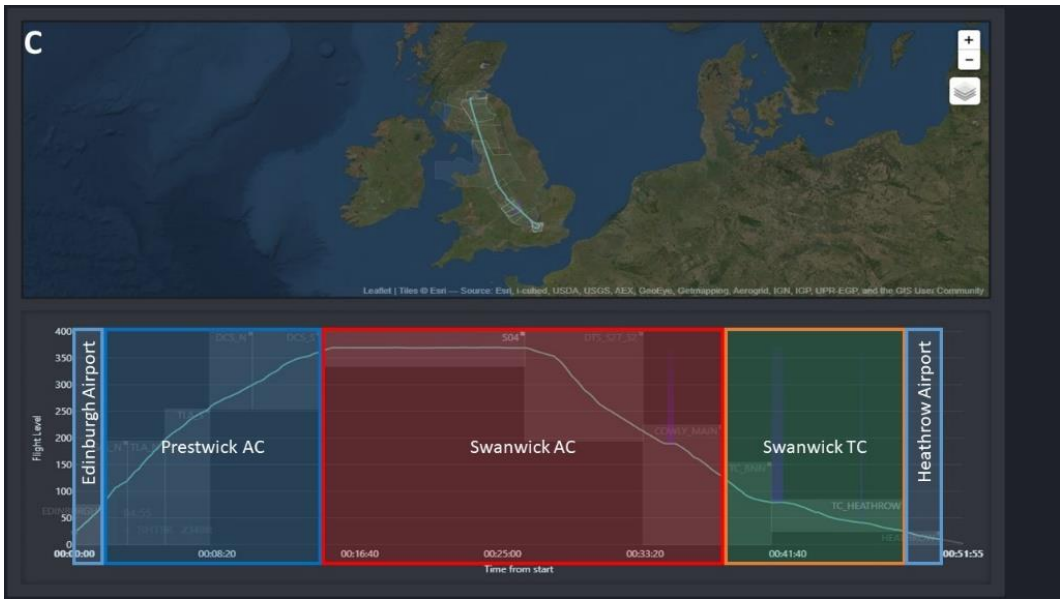
Summary, thanks and close

Stimulus for Qualitative research

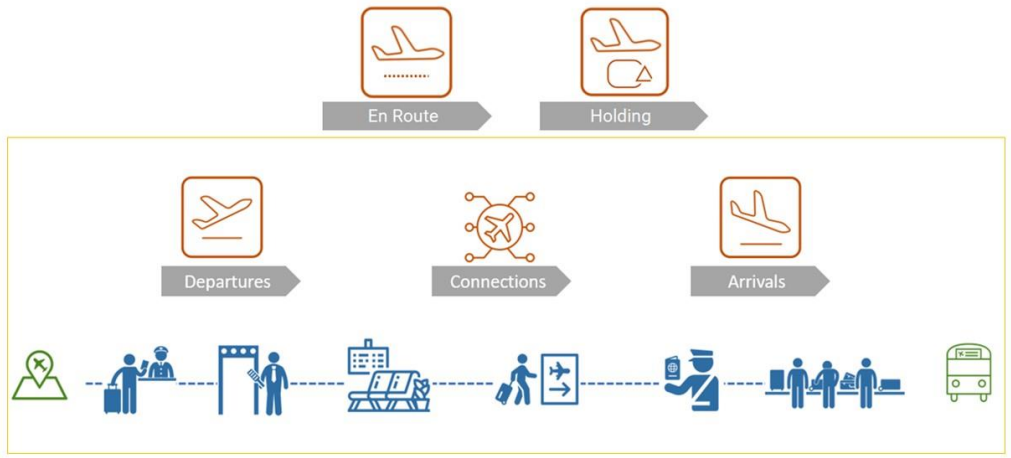
A

AIR TRAFFIC CONTROL

B - https://vimeo.com/370633291



D



E

1 Making sure flight safety is maintained as air traffic grows over the next 5-10 years	**2** Making flight paths more efficient to reduce fuel needed and so reduce flight emissions/pollution	**3** Reducing instances of long delays in departing (over 60 minutes)
4 Having the most direct flight path routing to minimise in-air travel time	**5** Reducing the need for flights to be in a holding pattern prior to descending into a destination airport	**6** Improving the punctuality of when flights land
7 Reducing levels of aircraft noise for people who live and work near airports/on the flight path	**8** Reducing the time you wait in the aircraft on the ground before taking off	**9** Reducing instances of short delays in departing (under 60 minutes)

F

Resilience

- By resilience, we mean the ability for systems and organisations to predict and manage any potential for surprise and failure - in air traffic control, this might be **an IT system failing**, an **Air Traffic Controller being affected by a virus** or **a radar going offline**. Solutions to these problems are things like overlapping radar coverage or multiple air traffic controllers being trained on the same airspace
- Managing this requires **investment** - and there is a trade-off between **how much is invested and how resilient the system is** (as well as what it is resilient to). Safety is never compromised as part of this.
- The amount invested will affect some areas of resilience – affecting how often the following events happen:
  - Delays (short or long)
  - The length of each delay (i.e. shorter / longer resolution times)
  - Use of holding patterns and/or inefficient routes being flown
  - One-off events that cause major disruption

G

Green Agenda

There are two areas of focus when it comes to the environment.

1) Reducing the environmental impact of aviation overall – investing in people, processes and technology to enable:

- Flying the most efficient routes
- Redesigning airspace to improve efficiency
- Creating new air traffic control tools to assist with managing the flow of air traffic

2) Decarbonisation of the organisations running air traffic control – investing to reduce the carbon footprint of the organisation, by enabling NATS to:

- Avoid generating new carbon emissions
- Reduce unavoidable carbon emissions
- Generate its own renewable energy

The amount invested in these two areas will affect the extent to which and how quickly these environmental benefits are realised (if at all).

H

Investing in new tech

It is critical for us to safely implement **new technical systems**, and that often drives a period of overlap between new & old.

- **Investment in new technology will:**
  - Deliver **additional environmental benefits** by enabling more efficient paths to be flown, reducing CO2 and fuel burn
  - Enable **increased capacity** to absorb any growth in air traffic, above 2019 levels
  - **Replace older systems** that are becoming more difficult and more expensive to maintain, therefore reducing the overall costs if brought in early enough
  - Enable **other benefits** to be realised (e.g. airspace modernisation, new ATC tooling, automation, etc.)

I

Investing in updating current tech

As well as investing in the new systems, we need to ensure our **existing and legacy systems are resilient** against a range of threats and risks.

- **Investment in updating current technology will:**
  - ensure it **remains reliable**, keeping engineering delays to a minimum
  - ensure it **remains secure** (dealing with cyber vulnerabilities and threats – increasingly difficult with legacy systems)
  - **support any revised transition plans** to ensure smooth transition to the new technology when it does arrive

L

ATC focuses on **departure time** to ensure as timely a departure as possible. This helps airports to make the most productive use of their infrastructure e.g. runway slots, gates, baggage handling

This means it's less predictable how many aircraft will arrive at the same time at the destination airport and can sometimes mean that there are bottle necks on arrival as flights cannot all land at once.

In these scenarios it can mean that flights are:

- Put into holding patterns when approaching destination
- Asked to slow down or speed up on route
- Asked to fly different routes to manage airport capacity at destination airport

This can mean that travel time in the air can be unpredictable

M

There is an option to focus on **arrival time**, which would require more tactical adjustments from control centres and airports.

This means that departures will be managed tactically with a focus on flights arriving on time to ensure the destination airport is not over capacity and delays when in flight are minimised

The result is that planes may not always take off at the time advertised but:

- Arrival time would be more predictable
- Flights are less likely to be held in a holding pattern
- Travel time in the air is more likely to be shorter on average

For passengers, this might see less time in holding at destination but potentially more occasions where aircraft are held on the ground at departure airports.

N - https://vimeo.com/327281123

Sample profile - Phase one: initial qualitative research

3 x 90 minute focus groups (4-5 participants per group)

Across the sample:

- Mix of those flying for business and those flying for leisure
- Mix of long-haul and short-haul passengers
- Mix of frequent and occasional/infrequent flyers
- Mix of SEG
- Mix of location, destination airports flown from and flown to

Specific group demographics:

- Group 1: 18-35yrs
- Group 2: 36-55yrs
- Group 3: 55+yrs

Sample profile - Phase two: quantitative survey

The geographic and demographic profile of the quantitative sample closely matched the sample quotas set, providing strong representation of UK adults in all regions of the UK, and across demographic groups, as detailed below.

		Number of respondents	% of total
Total sample		2,004	100%
Age	18-24	221	11%
	25-34	335	17%
	35-44	364	18%
	45-54	349	17%
	55-64	309	15%
	65+	426	21%
Gender	Male	983	49%
	Female	1014	51%
	Other	7	-
Region	Scotland	182	9%
	North East	103	5%
	North West	223	11%
	Yorkshire & the Humber	183	9%
	West Midlands	183	9%
	East Midlands	145	7%

	Wales	105	5%
	East Anglia	163	8%
	Greater London	240	12%
	South East (not London)	266	13%
	South West	147	7%
	Northern Ireland	64	3%

Sample sizes are sufficient for analysis by gender, age and region, and notable differences by these subgroups are highlighted in the report.

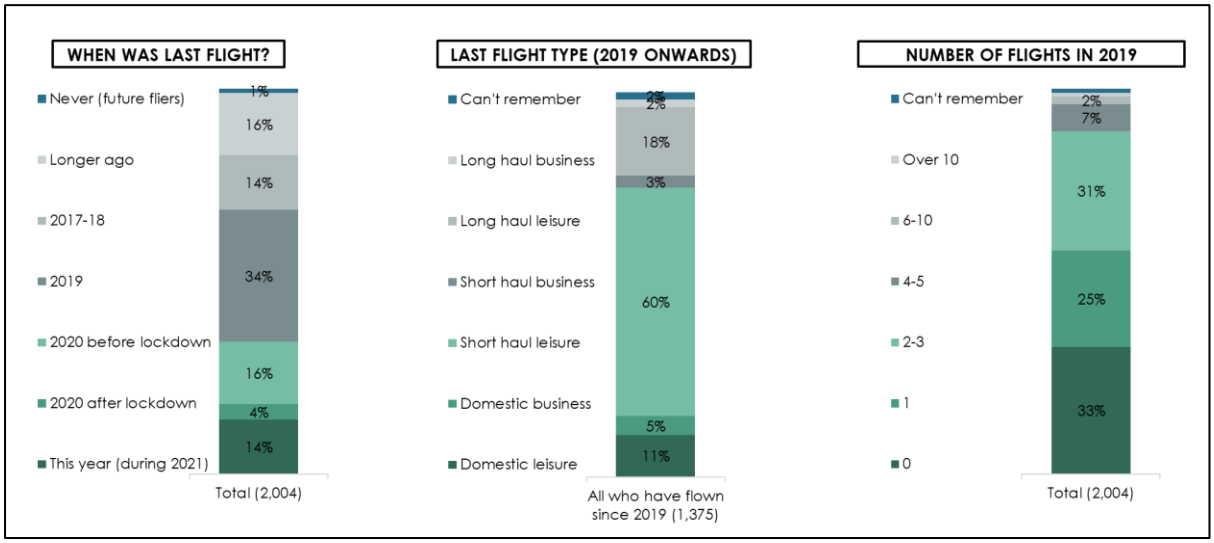
In addition, the survey collected information on whether respondents have either a non-physical or physical disability or condition that makes accessing and/or using airports or flying difficult. Of the total sample, 247 people (12%) identified with one or both of these circumstances. The report highlights where any notable differences are evident among these passengers, classified as 'special assistance'.

		Number of respondents	**% of total**
Total sample		2,004	100%
Special assistance disability or condition	Non-physical	121	6%
	Physical	183	9%
	Any	247	12%
	None	1,757	88%

In terms of flying behaviour, 'normal' patterns have been greatly disrupted by COVID-19 over the past two years. In collecting information on most recent flight, it was important to understand if passengers had last flown before or after COVID-19 restrictions were introduced. Amongst our total sample, a total of 360 (18%) told us they had flown from a UK airport **since** the pandemic / lockdown started.

To gauge respondents' typical flying frequency, rather than reflect the unusual circumstances of 2020-21, we collected information on how any flights they had taken in **2019** (the last full year before COVID-19 related restrictions came into force).

Respondents' recency and frequency of flying is detailed below.



Sample profile - Phase three: deliberative qualitative research

5 x 90 minute focus groups (4-5 participants per group)

Across the sample:

- Mix of those flying for business and those flying for leisure
- Mix of long-haul and short-haul passengers
- Mix of frequent and occasional/infrequent flyers
- Mix of SEG
- Mix of location, destination airports flown from and flown to

Specific group demographics:

- Group 1: 18-35yrs
- Group 2: 36-55yrs
- Group 3: 55+yrs
- Group 4: 18-24yrs
- Group 5: Recent and frequent flyers